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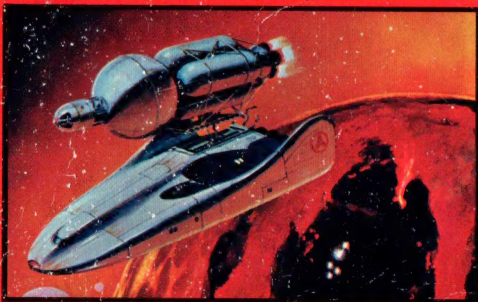
ISAAC ASIMOV

PRESENTS

THE GREAT SF STORIES

4

(1942)



EDITED BY ISAAC ASIMOV
AND MARTIN H. GREENBERG

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ISAAC ASIMOV

Presents

**THE GREAT
SCIENCE
FICTION
STORIES**

Volume 4, 1942

Edited by
Isaac Asimov and
Martin H. Greenberg

DAW BOOKS, INC.

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Introduction

In the world outside reality, the year started out badly and then improved. On January 10 the Japanese invaded the East Indies and on the 19th launched their invasion of Burma. Even more ominously, Rommel's Africa Corps opened a new drive toward Egypt on January 21, threatening the entire Allied position in North Africa, and the British suffered another defeat when Singapore surrendered on February 15, two weeks after Vidkun Quisling was made Premier of Norway and added another word to the language of collaboration.

Japan continued its advance in the Pacific Theatre with the surrender of Bataan on April 9, the taking of Mandalay on May 1, and the surrender of the gallant garrison at Corregidor on May 6. Only the mixed results achieved by the U. S. Navy at the Battle of Midway on and about June 3 prevented an unbroken string of Japanese successes.

Rommel appeared invincible in North Africa as Tobruk fell on June 21, but then a series of events heralded the beginning of the end for the Axis forces: U. S. troops landed on Guadalcanal in the Pacific on August 7, the Germans' major drive against Stalingrad was bloodily stalled as the fall wore on and on October 23 the British counterattacked Rommel at El Alamein—by November 4 the Germans were in retreat, their fate sealed four days later when Allied forces landed in North Africa. By November 19 the German army at Stalingrad was surrounded by a Soviet counteroffensive, and some members of the German General Staff saw the handwriting on the wall.

On December 2 beneath the University of Chicago, a refugee scientist named Enrico Fermi achieved the first controlled chain reaction inside the world's first nuclear reactor, a major step on the road to the atomic age.

During 1942 John Steinbeck published *The Moon is Down*, while Dmitri Shostakovich composed his *Seventh Symphony*. The great Ted Williams led the major leagues in

batting with a .351 average. The top films of the year were *How Green Was My Valley*, *Holiday Inn* and *Mrs. Miniver*.

The Beveridge Plan, which led directly to the present welfare state in Great Britain was published, as was James Burnham's classic study, *The Managerial Revolution*. Aaron Copland composed his beautiful *Lincoln Portrait* and Shut Out won the Kentucky Derby in a major upset. Albert Camus saw his *L'Etranger* (*The Stranger*) published and watched as it became one of the bibles of alienated man.

Some things did not change. Joe Louis was still the heavyweight boxing champion of the world and the world record for the mile run was *still* the 4:06.4 set by Sydney Wooderson in 1937.

1942 proved to be a remarkable year in science. In addition to Fermi's accomplishment, the first V-2 rocket was successfully tested by the Germans, while in the United States ENIAC (Electronic Numerical Integrator and Computer), the world's first real computer was assembled.

Greer Garson and James Cagney won Academy Awards. The Washington Redskins won the National Football League Championship and John Piper painted *Windsor Castle*. C. S. Lewis published *The Screwtape Letters*. The St. Louis Cardinals defeated the New York Yankees four games to one to take the World Series. Graham Sutherland painted his famous and non-ideological *Red Landscape*. T. S. Eliot published *Little Gidding*, while Erich Fromm's study *Escape From Freedom* seemed both appropriate and out of place in that totalitarian year. Stanford was the NCAA Basketball Champion.

Mel Brooks was still Melvin Kaminsky.

In the real world it was another good year, even though most of the top writers (and many fans) would soon be soldiers or working in war-related industries and/or research.

No new science fiction magazines were born, but all of the existing American ones made it through the year with the exception of *Stirring Science Stories*, which expired in March.

In the real world, more important people made their maiden voyages into reality: Hal Clement with "Proof" and Robert Abernathy with "Heritage" in June; in October, George O. Smith with "QRM-Interplanetary," and in December, E(dna) Mayne Hull with "The Flight That Failed."

More wondrous things happened in the real world: Robert A. Heinlein (as Anson MacDonald) published "Beyond This

Horizon" and "Waldo," Jack Williamson (as Will Stewart) published "Collision Orbit," the first of his excellent *Seetee* stories and Isaac Asimov began his classic *Foundation* series.

Death took Alexander Belyaev, one of the pioneer Russian science fiction writers.

But distant wings were beating as C. J. Cherryh, Samuel R. Delany, Langdon Jones, David Ketterer, Franz Rottensteiner, Douglas Trumbull, William Joe Watkins and Chelsea Quinn Yarbro were born.

Let us travel back to that honored year of 1942 and enjoy the best stories that the real world bequeathed to us.

ERRATA DEPARTMENT:

We would like to thank our readers for letting us know that five of the stories by Robert A. Heinlein that could not be included in Volumes 2 and 3 of this series are not in his *The Past Through Tomorrow*. These stories can be found in the following collections:

"And He Built a Crooked House" and "They"—THE UNPLEASANT PROFESSION OF JONATHAN HOAG

"Universe"—part of ORPHANS OF THE SKY

"Solution Unsatisfactory"—THE WORLDS OF ROBERT A. HEINLEIN

"By His Bootstraps"—THE MENACE FROM EARTH

We regret the error.
M.H.G.

THE STAR MOUSE

Planet Stories,

February

by Fredric Brown (1906-1972)

Although the late Fredric Brown built his reputation on the wit and humor that characterized his stories, he also brought a strong dose of cynicism to his work. He specialized in the short-short, and science fiction has yet to see his equal in this possibly most difficult of formats. His novels include the hilarious What Mad Universe (1949), the sober and moving The Lights in the Sky Are Stars (1953) and Martians Go Home, (1955), but the finest sf book that carries his name is The Best of Fredric Brown (1977). A fine craftsman in several genres, his mystery and suspense fiction is even better than his sf.

"The Star Mouse" is a fable for all ages, featuring one of the most endearing protagonists in the history of science fiction.

(It wasn't till December 1948 that I first met Fred Brown at a meeting of the Hydra Club at the home of Fletcher Pratt. Fred was short and thin and looked like a bookkeeper, but he was the classic example of a man who didn't look like the books he wrote. His book *Screaming Mimi* was a classic and my personal favorite of his works. He insisted on playing chess with me but was five times as good as I was. However, he talked as he played (perhaps without knowing it) and constantly reasoned out what he thought I was doing. I caught on and started doing what he thought I was doing and in the end I managed to elicit a draw then quit while I was ahead. When someone asks me, by the way, if it is possible to write good science fiction without knowing any science, I always say "yes" and as examples cite several writers, of whom Fred Brown is one. —I.A.)

Mitkey, the Mouse, wasn't Mitkey then.

He was just another mouse, who lived behind the floorboards and plaster of the house of the great Herr Professor Oberburger, formerly of Vienna and Heidelberg; then a refugee from the excessive admiration of the more powerful of his fellow-countrymen. The excessive admiration had concerned, not Herr Oberburger himself, but a certain gas which had been a by-product of an unsuccessful rocket fuel—which might have been a highly successful something else.

If, of course, the Professor had given them the correct formula. Which he—Well, anyway, the Professor had made good his escape and now lived in a house in Connecticut. And so did Mitkey.

A small grey mouse, and a small gray man. Nothing unusual about either of them. Particularly there was nothing unusual about Mitkey; he had a family and he liked cheese and if there were Rotarians among mice, he would have been a Rotarian.

The Herr Professor, of course, had his mild eccentricities. A confirmed bachelor, he had no one to talk to except himself, but he considered himself an excellent conversationalist and held constant verbal communion with himself while he worked. That fact, it turned out later, was important, because Mitkey had excellent ears and heard those night-long soliloquies. He didn't understand them, of course. If he thought about them at all, he merely thought of the Professor as a large and noisy super-mouse who squeaked overmuch.

"Und now," he would say to himself, "ve vill see vether this eggshaust tube vas broberly machined. It should fidt vithin vun vun-hundredth thousandth uf an indtch. Ahhh, it iss perfect. Und now—"

Night after night, day after day, month after month. The gleaming thing grew, and the gleam in Herr Oberburger's eyes grew apace.

It was about three and a half feet long, with weirdly shaped vanes, and it rested on a temporary framework on a table in the center of the room that served the Herr Professor for all purposes. The house in which he and Mitkey lived was a four-room structure, but the Professor hadn't yet found it out, seemingly. Originally, he had planned to use the big

room as a laboratory only, but he found it more convenient to sleep on a cot in one corner of it, when he slept at all, and to do the little cooking he did over the same gas burner over which he melted down golden grains of TNT into a dangerous soup which he salted and peppered with strange condiments, but did not eat.

"Und now I shall bour it into tubes, und see vether vun tube adjacent to another eggsplodes der second tube vhen der virst tube iss—"

That was the night Mitkey almost decided to move himself and his family to a more stable abode, one that did not rock and sway and try to turn handsprings on its foundations. But Mitkey didn't move after all, because there were compensations. New mouseholes all over, and—joy of joy!—a big crack in the back of the refrigerator where the Professor kept, among other things, food.

Of course the tubes had been not larger than capillary size, or the house would not have remained around the mouseholes. And of course Mitkey could not guess what was coming or understand the Herr Professor's brand of English (nor any other brand of English, for that matter) or he would not have let even a crack in the refrigerator tempt him.

The Professor was jubilant that morning.

"Der fuel, it vorks! Der second tube, it did not eggsplode. Und Der virst, in *seggtions*, as I had eggspectedt! Und it is more bowerful; there will be blenty of room for der combartment—"

Ah, yes, the compartment. That was where Mitkey came in, although even the Professor didn't know it yet. In fact the Professor didn't even know that Mitkey existed.

"Und now," he was saying to his favorite listener, "it is but a matter of combining der fuel tubes so they work in obbosite bairs. Und then—"

That was the moment when the Herr Professor's eyes first fell on Mitkey. Rather, they fell upon a pair of gray whiskers and a black, shiny little nose protruding from a hole in the baseboards.

"Vell!" he said, "vot haff ve here! Mitkey Mouse himself! Mitkey, how would you like to go for a ride, negst veek? Ve shall see."

That is how it came about that the next time the Professor sent into town for supplies, his order included a mousetrap—not one of the vicious kind that kills but one of

the wire-cage kind. And it had not been set, with cheese, for more than ten minutes before Mitkey's sharp little nose had smelled out that cheese and he had followed his nose into captivity.

Not, however, an unpleasant captivity. Mitkey was an honored guest. The cage reposed now on the table at which the Professor did most of his work, and cheese in indigestion-giving abundance was pushed through the bars, and the Professor didn't talk to himself any more.

"You see, Mitkey, I was going to send to der laboratory in Hartford for a white mouse, budt vhy should I, mit you here? I am sure you are more sound und healthy und able to withstand a long chourney than those laboratory mices. No? Ah, you viggles your viskers und that means yes, no? Und being used to living in dark holes, you should suffer less than they from glaustrophobia, no?"

And Mitkey grew fat and happy and forgot all about trying to get out of the cage. I fear that he even forgot about the family he had abandoned, but he knew, if he knew anything, that he need not worry about them in the slightest. At least not until and unless the Professor discovered and repaired the hole in the refrigerator. And the Professor's mind was most emphatically not on refrigeration.

"Und so, Mitkey, ve shall place this vane so—it iss only of assistance in der landing, in an atmosphere. It und these vill bring you down safely und slowly enough that der shock-absorbers in der movable combartment vill keep you from bumping your head too hard, I think." Of course, Mitkey missed the ominous note to that "I think" qualification because he missed all the rest of it. He did not, as has been explained, speak English. Not then.

But Herr Oberburger talked to him just the same. He showed him pictures. "Did you effer see der Mouse you was named after, Mitkey? Vhat? No? Loogk, this is der original Mitkey Mouse, by Valt Dissney. But I think you are cuter, Mitkey."

Probably the Professor was a bit crazy to talk that way to a little gray mouse. In fact, he must have been crazy to make a rocket that worked. For the odd thing was that the Herr Professor was not really an inventor. There was, as he carefully explained to Mitkey, not one single thing about that rocket that was new. The Herr Professor was a technician; he could take other people's ideas and make them work. His only real invention—the rocket fuel that wasn't one—had been

turned over to the United States Government and had proved to be something already known and discarded because it was too expensive for practical use.

As he explained very carefully to Mitkey, "It iss burely a matter of absolute accuracy and mathematical correctness Mitkey. Idt iss all here—ve merely combine—und ve achieff vhat, Mitkey?

"Eggscape velocity, Mitkey! Chust barely, it adds up to eggscape velocity. Maybe. There are yet unknown factors, Mitkey, in der ubper atmosphere, der troposphere, der stratosphere. Ve think ve know eggsactly how much air there iss to calculate resistancé against, but are ve absolutely sure? No, Mitkey, ve are not. Ve haff not been there. Und der marchin iss so narrow that so much as an air current might affect it."

But Mitkey cared not a whit. In the shadow of the tapering aluminum-alloy cylinder he waxed fat and happy.

"Der tag, Mitkey, der tag! Und I shall not lie to you, Mitkey. I shall not giff you valse assurances. You go on a dancherous chourney, mein little friend.

"A vifty-vifty chance ve giff you, Mitkey. Not der moon or bust, but der moon und bust, or else maybe safely back to earth. You see, my boor little Mitkey, der moon iss not made of green cheese und if it were, you vould not live to eat it because there iss not enough atmosphere to bring you down safely und vith your viskers still on.

"Und vhy then, you may vell ask, do I send you? Because der rocket may *not* attain eggscape velocity. Und in that case it iss still an eggssperiment, but a different vun. Der rocket, if it goes not to der moon, falls back on der earth, no? Und in that case certain instruments shall giff us further information than ve haff yet about things up there in space. Und you shall giff us information, by vether or not you are yet alive, vether der shock absorbers und vanes are sufficient in an earth-equivalent atmosphere. You see?

"Then later, vhen ve send rockets to Venus maybe vhere an atmosphere eggssists, ve shall haff data to calculate the needed size of vanes und shock absorbers, no? Und in either case, und vether nor not you return, Mitkey, you shall be vamous! You shall be der virst liffig greature to go out beyond der stratosphere of der earth, out into space.

"Mitkey, you shall be der Star-Mousel I enfy you, Mitkey, und I only vish I vere your size, so I could go, too."

Der tag, and the door to the compartment. "Gootbye, little Mitkey Mouse." Darkness. Silence. Noise!

"Der rocket—if it goes not to der moon—falls back on der earth, no?" That was what the Herr Professor thought. But the best-laid plans of mice and men gang aft agley. Even star-mice.

All because of Prxl.

The Herr Professor found himself very lonely. After having had Mitkey to talk to, soliloquies were somehow empty and inadequate.

There may be some who say that the company of a small gray mouse is a poor substitute for a wife; but others may disagree. And, anyway, the Professor had never had a wife, and he *had* a mouse to talk to, so he missed one and, if he missed the other, he didn't know it.

During the long night after the launching of the rocket, he had been very busy with his telescope, a sweet little eight-inch reflector, checking its course as it gathered momentum. The exhaust explosions made a tiny fluctuating point of light that was possible to follow, if one knew where to look.

But the following day there seemed to be nothing to do, and he was too excited to sleep, although he tried. So he compromised by doing a spot of housekeeping, cleaning the pots and pans. It was while he was so engaged that he heard a series of frantic little squeaks and discovered that another small gray mouse, with shorter whiskers and a shorter tail than Mitkey, had walked into the wire-cage mousetrap.

"Vell, vell," said the Professor, "vot haff ve here? Minnie? Iss it Minnie come to look for her Mitkey?"

The Professor was not a biologist, but he happened to be right. It *was* Minnie. Rather, it was Mitkey's mate, so the name was appropriate. What strange vagary of mind had induced her to walk into an unbaited trap, the Professor neither knew nor cared, but he was delighted. He promptly remedied the lack of bait by pushing a sizable piece of cheese through the bars.

Thus it was that Minnie came to fill the place of her far-traveling spouse as repository for the Professor's confidences. Whether she worried about her family or not there is no way of knowing, but she need not have done so. they were now large enough to fend for themselves, particularly in a house that offered abundant cover and easy access to the refrigerator.

"Ah, und now it iss dargk enough, Minnie, that ve can look for that husband of yours. His viery trail across the sky. True, Minnie, it iss a very small viery trail und der astronomers vill not notice it, because they do not know vhere to look. But ve do.

"He iss going to be a very vamous mouse, Minnie, this Mitkey of ours, vhen ve tell der vorld about him und about mein rocket. You see, Minnie ve haff not told them yet. Ve shall vait und giff der gocomplete story all at vunce. By dawn of tomorrow ve'll—

"Ah, there he iss, Minnie! Vaint, but there. I'd hold you up to der scope und let you look, but it vould not be vocused, right for your eyes, und I do not know how to—

"Almost vun hundred thousand miles, Minnie, und still agcelerating, but not for much longer. Our Mitkey iss on schedule; in fagt he iss going vaster than ve had vigured, no? It iss sure now that he vill eggscap the gravitation of der earth, und fall upon der moon!"

Of course, it was purely coincidental that Minnie squeaked.

"Ah, yess, Minnie, little Minnie. I know, I know. Ve shall neffer see our Mitkey again, und I almost vish our eggssperiment had vailed. But there are gompensations, Minnie. He shall be der most vamous of all mices. Der Star-Mouse! Virst liffig greature effer to go beyond der gravitational pull of earth!"

The night was long. Occasionally high clouds obscured vision.

"Minnie, I shall make you more gomfortable than in that so-small vire cage. You vould like to seem to be vree, vould you not, vithout bars, like der animals at modern zoos, vith moats instead?"

And so, to fill in an hour when a cloud obscured the sky, the Herr Professor made Minnie her new home. It was the end of a wooden crate, about half an inch thick and a foot square, laid flat on the table, and with no visible barrier around it.

But he covered the top with metal foil at the edges, and he placed the board on another larger board which also had a strip of metal foil surrounding the island of Minnie's home. And wires from the two areas of metal foil to opposite terminals of a small transformer which he placed nearby.

"Und now, Minnie, I shall blace you on your island, vvhich shall be liberally supplied mitt cheese and vater, und you shall vind it iss an eggcelent blace to liff. But you vill get a mild

shock or two when you try to step off der edge of der island. It vill not hurt much, but you vill not like it, und after a few tries you vill learn not to try again, no? Und—"

And night again.

Minnie happy on her island, her lesson well learned. She would no longer so much as step on the inner strip of metal foil. It was a mouse paradise of an island, though. There was a cliff of cheese bigger than Minnie herself. It kept her busy. Mouse and cheese; soon one would be a transmutation of the other.

But Professor Oberburger wasn't thinking about that. The Professor was worried. When he had calculated and recalculated and aimed his eight-inch reflector through the hole in the roof and turned out the lights—

Yes, there are advantages to being a bachelor after all. If one wants a hole in the roof, one simply knocks a hole in the roof and there is nobody to tell one that one is crazy. If winter comes, or if it rains, one can always call a carpenter or use a tarpaulin.

But the faint trail of light wasn't there. The Professor frowned and re-calculated and re-re-calculated and shifted his telescope three-tenths of a minute and still the rocket wasn't there.

"Minnie, something iss wrong. Either der tubes haff stopped viring, or—"

Or the rocket was no longer traversing a straight line relative to its point of departure. By straight, of course, is meant parabolically curved relative to everything other than velocity.

So the Herr Professor did the only thing remaining for him to do and began to search, with the telescope, in widening circles. It was two hours before he found it, five degrees off course already and veering more and more into a— Well, there was only one thing you could call it. A tailspin.

The darned thing was going in circles, circles which appeared to constitute an orbit about something that couldn't possibly be there. Then narrowing into a concentric spiral.

Then—out. Gone. Darkness. No rocket flares.

The Professor's face was pale as he turned to Minnie.

"It iss *impossible*, Minnie. Mein own eyes, but it could not be. Even if vun side stopped viring, it could not haff gone into such sudden circles." His pencil verified a suspicion. "Und, Minnie, it decelerated vaster than bossible. Even mitt *no* tubes viring, its momentum vould haff been more—"

The rest of the night—telescope and calculus—yielded no clue. That is, no believable clue. Some force not inherent in the rocket itself, and not accountable by gravitation—even of a hypothetical body—had acted.

“Mein poor Mitkey.”

The gray, inscrutable dawn. “Mein Minnie, it vill haff to be a secret. Ve dare not publish vhat ve saw, for it would not be believed. I am not sure I believe it myself, Minnie. Ber-haps because I vas offertired vrom not sleeping, I chust imachined that I saw—”

Later. “But, Minnie, ve shall hope. Vun hundred vifty thousand miles out, it vas. It vill fall back upon der earth. But I gannot tell vhere! I thought that if it did, I would be able to galculate its course, und— But after those goncentric cirkles—Minnie, not even *Einstein* could galculate vhere it vill land. Not effen me. All ve can do iss hope that ve shall hear of vhere it falls.”

Cloudy day. Black night jealous of its mysteries.

“Minnie, our poor Mitkey. There is *nothing* could have cauzed—”

But something had.

Prxl.

Prxl is an asteroid. It isn't called that by earthly astronomers, because—for excellent reasons—they have not discovered it. So we will call it by the nearest possible transliteration of the name its inhabitants use. Yes, it's inhabited.

Come to think of it, Professor Oberburger's attempt to send a rocket to the moon had some strange results. Or rather, Prxl did.

You wouldn't think that an asteroid could reform a drunk, would you? But one Charles Winslow, a besotted citizen of Bridgeport, Connecticut, never took a drink when—right on Grove Street—a mouse asked him the road to Hartford. The mouse was wearing bright red pants and vivid yellow gloves—

But that was fifteen months after the Professor lost his rocket. We'd better start over again.

Prxl is an asteroid. One of those despised celestial bodies which terrestrial astronomers call vermin of the sky, because the darned things leave trails across the plates that clutter up the more important observations of novae and nebulae. Fifty thousand fleas on the dark dog of night.

Tiny things, most of them. Astronomers have been discovering recently that some of them come close to Earth. Amazingly close. There was excitement in 1932 when Amor came within ten million miles; astronomically, a mere mashie shot. Then Apollo cut that almost in half, and in 1936 Adonis came within less than one and a half million miles.

In 1937, Hermes, less than half a million but the astronomers got really excited when they calculated its orbit and found that the little mile-long asteroid can come within a mere 220,000 miles, closer than Earth's own moon.

Some day they may be still more excited, if and when they spot the $\frac{3}{8}$ -mile asteroid Prxl, that obstacle of space, making a transit across the moon and discover that it frequently comes within a mere hundred thousand miles of our rapidly whirling world.

Only in event of a transit will they ever discover it, though, for Prxl does not reflect light. It hasn't, anyway, for several million years since its inhabitants coated it with a black, light-absorbing pigment derived from its interior. Monumental task, painting a world, for creatures half an inch tall. But worth it, at the time. When they'd shifted its orbit, they were safe from their enemies. There were giants in those days—eight-inch-tall marauding pirates from Diemos. Got to Earth a couple of times too, before they faded out of the picture. Pleasant little giants who killed because they enjoyed it. Records in now-buried cities on Diemos might explain what happened to the dinosaurs. And why the promising Cro-Magnons disappeared at the height of their promise only a cosmic few minutes after the dinosaurs went west.

But Prxl survived. Tiny world no longer reflecting the sun's rays, lost to the cosmic killers when its orbit was shifted.

Prxl. Still civilized, with a civilization millions of years old. Its coat of blackness preserved and renewed regularly, more through tradition than fear of enemies in these later degenerate days. Mighty but stagnant civilization, standing still on a world that whizzes like a bullet.

And Mitkey Mouse.

Klarloth, head scientist of a race of scientists, tapped his assistant Bemj on what would have been Bemj's shoulder if he had had one. "Look," he said, "what approaches Prxl. Obviously artificial propulsion."

Bemj looked into the wall plate and then directed a thought wave at the mechanism that jumped the magnifica-

tion of a thousand-fold through an alteration of the electronic field.

The image leaped, blurred, then steadied. "Fabricated," said Bemj. "Extremely crude, I must say. Primitive explosive-powered rocket. Wait, I'll check where it came from."

He took the readings from the dials about the viewplate and hurled them as thoughts against the psychocoil of the computer, then waited while that most complicated of machines digested all the factors and prepared the answer. Then, eagerly, he slid his mind into rapport with its projector. Klarloth likewise listened in to the silent broadcast.

Exact point on Earth and exact time of departure. Untranslatable expression of curve of trajectory, and point on that curve where deflected by gravitational pull of Prxl. The destination—or rather the original intended destination—of the rocket was obvious, Earth's moon. Time and place of arrival on Prxl if present course of rocket were unchanged.

"Earth," said Klarloth meditatively. "They were a long way from rocket travel the last time we checked them. Some sort of a crusade, or battle of beliefs, going on, wasn't there?"

Bemj nodded. "Catapults. Bows and arrows. They've taken a long stride since, even if this is only an early experimental thing of a rocket. Shall we destroy it before it gets here?"

Klarloth shook his head thoughtfully. "Let's look it over. May save us a trip to Earth; we can judge their present state of development pretty well from the rocket itself."

"But then we'll have to—"

"Of course. Call the Station. Tell them to train their attracto-repulsors on it and to swing it into a temporary orbit until they prepare a landing-cradle. And not to forget to damp out the explosive before they bring it down."

"Temporary force-field around point of landing—in case?"

"Naturally."

So despite the almost complete absence of atmosphere in which the vanes could have functioned, the rocket came down safely and so softly that Mitkey, in the dark compartment, knew only that the awful noise had stopped.

Mitkey felt better. He ate some more of the cheese with which the compartment was liberally provided. Then he resumed trying to gnaw a hole in the inch-thick wood with which the compartment was lined. That wooden lining was a kind of thought of the Herr Professor for Mitkey's mental well-being. He knew that trying to gnaw his way out would give Mitkey something to do en route which would keep him

from getting the screaming meemies. The idea had worked; being busy, Mitkey hadn't suffered mentally from his dark confinement. And now that things were quiet, he chewed away more industriously and more happily than ever, sublimely unaware that when he got through the wood, he'd find only metal which he couldn't chew. But better people than Mitkey have found things they couldn't chew.

Meanwhile, Klarloth and Bemj and several thousand other Prxlians stood gazing up at the huge rocket which, even lying on its side, towered high over their heads. Some of the younger ones, forgetting the invisible field of force, walked too close and came back, ruefully rubbing bumped heads.

Klarloth himself was at the psychograph.

"There *is* life inside the rocket," he told Bemj. "But the impressions are confused. One creature, but I cannot follow its thought processes. At the moment it seems to be doing something with its teeth."

"It could not be an Earthling, one of the dominant race. One of them is much larger than this huge rocket. Gigantic creatures. Perhaps, unable to construct a rocket large enough to hold one of themselves, they sent an experimental creature, such as our wooraths."

"I believe you've guessed right, Bemj. Well, when we have explored its mind thoroughly, we may still learn enough to save us a checkup trip to Earth. I am going to open the door."

"But air—creatures of Earth would need a heavy, almost a dense atmosphere. It could not live."

"We retain the force-field, of course. It will keep the air in. Obviously there is a source of supply of air within the rocket or the creature would not have survived the trip."

Klarloth operated controls, and the force-field itself put forth invisible pseudo-pods and turned the outer screw-door, then reached within and unlatched the inner door to the compartment itself.

All Prxl watched breathlessly as a monstrous gray head pushed out of the huge aperture yawning overhead. Thick whiskers, each as long as the body of a Prxlian—

Mitkey jumped down, and took a forward step that bumped his black nose hard—into something that wasn't there. He squeaked, and jumped backward against the rocket.

There was disgust in Bemj's face as he looked up at the

monster. "Obviously much less intelligent than a woorath. Might just as well turn on the ray."

"Not at all," interrupted Klarloth. "You forget certain very obvious facts. The creature is unintelligent, of course, but the subconscious of every animal holds in itself every memory, every impression, every sense image, to which it has ever been subjected. If this creature has ever heard the speech of the Earthlings, or seen any of their works—besides this rocket—every word and every picture is indelibly graven. You see now what I mean?"

"Naturally. How stupid of me, Klarloth. Well, one thing is obvious from the rocket itself: we have nothing to fear from the science of Earth for at least a few millennia. So there is no hurry, which is fortunate. For to send back the creature's memory to the time of its birth, and to follow each sensory impression in the psychograph will require—well, a time at least equivalent to the age of the creature, whatever that is, plus the time necessary for us to interpret and assimilate each."

"But that will not be necessary, Bemj."

"No? Oh, you mean the X-19 waves?"

"Exactly. Focused upon this creature's brain center, they can, without disturbing his memories, be so delicately adjusted as to increase his intelligence—now probably about .0001 in the scale—to the point where he is a reasoning creature. Almost automatically, during the process, he will assimilate his own memories, and understand them just as he would if he had been intelligent at the time he received those impressions."

"See, Bemj? He will automatically sort out irrelevant data and will be able to answer our questions."

"But would you make him as intelligent as—?"

"As we? No, the X-19 waves would not work so far. I would say to about .2 on the scale. That, judging from the rocket, coupled with what we remember of Earthlings from our last trip there, is about their present place on the intelligence scale."

"Ummm, yes. At that level, he would comprehend his experiences on Earth just sufficiently that he would not be dangerous to us, too. Equal to an intelligent Earthling. Just about right for our purpose. Then, shall we teach him our language?"

"Wait," said Klarloth. He studied the psychograph closely for a while. "No, I do not think so. He will have a language

of his own. I see in his subconscious, memories of many long conversations. Strangely, they all seem to be monologues by one person. But he will have a language—a simple one. It would take him a long time, even under treatment, to grasp the concepts of our own method of communication. But we can learn his, while he is under the X-19 machine, in a few minutes.”

“Does he understand, now, any of that language?”

Klarloth studied the psychograph again. “No, I do not believe he— Wait, there is one word that seems to mean something to him. The word ‘Mitkey.’ It seems to be his name, and I believe that, from hearing it many times, he vaguely associates it with himself.”

“And quarters for him—with air-locks and such?”

“Of course. Order them built.”

To say it was a strange experience for Mitkey is understatement. Knowledge is a strange thing, even when it is acquired gradually. To have it thrust upon me—

And there were little things that had to be straightened out. Like the matter of vocal chords. His weren’t adapted to the language he now found he knew. Bemj fixed that; you would hardly call it an operation because Mitkey—even with his new awareness—didn’t know what was going on, and he was wide awake at the time. And they didn’t explain to Mitkey about the J-dimension with which one can get at the inwardness of things without penetrating the outside.

They figured things like that weren’t in Mitkey’s line, and anyway they were more interested in learning from him than teaching him. Bemj and Klarloth and a dozen others deemed worthy of the privilege. If one of them wasn’t talking to him, another was.

Their questioning helped his own growing understanding. He would not, usually, know that he knew the answer to a question until it was asked. Then he’d piece together, without knowing just how he did it (any more than you or I know *how* we know things) and give them the answer.

Bemj: “Iss this language vvhich you sbeak a universal vun?”

And Mitkey, even though he’d never thought about it before, had the answer ready: “No, it iss not. It iss Englitch, but I remember der. Herr Brofessor sbeaking of other tongues. I belief he sboke another himself originally, but in America he always sboke Englitch to become more vamiliar mitt it. It iss a beaudiful sbeech, is it not?”

"Hmmm," said Bemj.

Klarloth? "Und your race, the mices. Are they treated vell?"

"Nobt by most people," Mitkey told him. And explained.

"I would like to do something for them," he added. "Look, could I not take back mitt me this brocess vchich you used upon me? Abbyly it to other mices, und greate a race of super-mices?"

"Vhy not?" asked Bemj.

He saw Klarloth looking at him strangely, and threw his mind into rapport with the chief scientist's, with Mitkey left out of the silent communion.

"Yes, of course," Bemj told Klarloth, "it will lead to trouble on Earth, grave trouble. Two equal classes of beings so dissimilar as mice and men cannot live together in amity. But why should that concern us, other than favorably? The resultant mess will slow down progress on Earth—give us a few more millennia of peace before Earthlings discover we are here, and trouble starts. You know these Earthlings."

"But you would give them the X-19 waves? They might—"

"No, of course not. But we can explain to Mitkey here how to make a very crude and limited machine for them. A primitive one which would suffice for nothing more than the specific task of converting mouse mentality from .0001 to .2, Mitkey's own level and that of the bifurcated Earthlings."

"It is possible," communicated Klarloth. "It is certain that for eons to come they will be incapable of understanding its basic principle."

"But could they not use even a crude machine to raise their own level of intelligence?"

"You forget, Bemj, the basic limitation of the X-19 rays; that no one can possibly design a projector capable of raising any mentality to a point on the scale higher than his own. Not even we."

All this, of course, over Mitkey's head, in silent Prxlian.

More interviews, and more.

Klarloth again: "Mitkey, ve varn you of vun thing. Avoid carelessness vith electricity. Der new molecular rearranchement of your brain center—it iss unstable, und—"

Bemj: "Mitkey, are you sure your Herr Brofessor iss der most advanced of all who eggspexperiment vith der rockets?"

"In cheneral, yess, Bemj. There are others who on vun specific boint, such as eggsplosives, mathematics, astrovisics, may

know more, but not much more. Und for combining these knowledges, he iss ahead."

"It iss vell," said Bemj.

Small gray mouse towering like a dinosaur over tinier half-inch Prxlians. Meek, herbivorous creature though he was, Mitkey could have killed any one of them with a single bite. But, of course, it never occurred to him to do so, nor to them to fear that he might.

They turned him inside out mentally. They did a pretty good job of study on him physically, too, but that was through the J-dimension, and Mitkey didn't even know about it.

They found out what made him tick, and they found out everything he knew and some things he didn't even know he knew. And they grew quite fond of him.

"Mitkey," said Klarloth one day, "all der civilized races on Earth veer glothing, do they not? Vell, if you are to raise der level of mices to men, vould it not be vitting that you veer glothes, too?"

"An eggcelent idea, Herr Klarloth. Und I know chust vhat kind I should like. Der Herr Brofessor vunce showed me a bicture of a mouse bainted by der artist Dissney, und der mouse vore glothing. Der mouse vas not a real-life vun, but an imachinary mouse in a barable, und der Brofessor named me after der Dissney mouse."

"Vot kind of glothing vas it, Mitkey?"

"Bright red bants mitt two big yellow buttons in frondt und two in back, und yellow shoes for der back feet und a pair of yellow gloves for der front. A hole in der seat of der bants to aggomodate der tail."

"Ogay, Mitkey. Such shall be ready for you in fife minutes."

That was on the eve of Mitkey's departure. Originally Bemj had suggested awaiting the moment when Prxl's eccentric orbit would again take it within a hundred and fifty thousand miles of Earth. But, as Klarloth pointed out, that would be fifty-five Earth years ahead, and Mitkey wouldn't last that long. Not unless they—And Bemj agreed that they had better not risk sending a secret like that back to Earth.

So they compromised by refueling Mitkey's rocket with something that would cancel out the million and a quarter odd miles he would have to travel. That secret they didn't have to worry about, because the fuel would be gone by the time the rocket landed.

Day of departure.

"Ve haff done our best, Mitkey, to set und time der rocket so it vill land on or near der spot from vvhich you left Earth. But you gannot eggspect agguracy in a voyach so long as this. But you vill land near. The rest iss up to you. Ve haff equivipped the rocket ship for effery contingency."

"Thank you, Herr Klarloth, Herr Bemj. Gootbye."

"Gootbye, Mitkey. Ve hate to loose you.

"Gootbye, Mitkey."

"Gootbye, gootbye . . ."

For a million and a quarter miles, the aim was really excellent. The rocket landed in Long Island Sound, ten miles out from Bridgeport, about sixty miles from the house of Professor Oberburger near Hartford.

They had prepared for a water landing, of course. The rocket went down to the bottom, but before it was more than a few dozen feet under the surface, Mitkey opened the door—especially reequipped to open from the inside—and stepped out.

Over his regular clothes he wore a neat little diving suit that would have protected him at any reasonable depth, and which, being lighter than water, brought him to the surface quickly where he was able to open his helmet.

He had enough synthetic food to last him for a week, but it wasn't necessary, as things turned out. The night boat from Boston carried him in to Bridgeport on its anchor chain, and once in sight of land he was able to divest himself of the diving suit and let it sink to the bottom after he'd punctured the tiny compartments that made it float, as he'd promised Klarloth he would do.

Almost instinctively, Mitkey knew that he'd do well to avoid human beings until he'd reached Professor Oberburger and told his story. His worst danger proved to be the rats at the wharf where he swam ashore. They were ten times Mitkey's size and had teeth that could have taken him apart in two bites.

But mind has always triumphed over matter. Mitkey pointed an imperious yellow glove and said, "Scram," and the rats scrambled. They'd never seen anything like Mitkey before, and they were impressed.

So for that matter, was the drunk of whom Mitkey inquired the way to Hartford. We mentioned that episode before. That was the only time Mitkey tried direct

communication with strange human beings. He took, of course, every precaution. He addressed his remarks from a strategic position only inches away from a hole into which he could have popped. But it was the drunk who did the popping, without even waiting to answer Mitkey's question.

But he got there, finally. He made his way afoot to the north side of town and hid out behind a gas station until he heard a motorist who had pulled in for gasoline inquire the way to Hartford. And Mitkey was a stowaway when the car started up.

The rest wasn't hard. The calculations of the Prxlians showed that the starting point of the rocket was five Earth miles northwest of what showed on their telescopomaps as a city, and which from the Professor's conversation Mitkey knew would be Hartford.

He got there.

"Hello, Brofessor."

The Herr Professor Oberburger looked up, startled. There was no one in sight. "Vot?" he asked, of the air. "Who iss?"

"It iss I, Brofessor. Mitkey, der mouse whom you sent to der moon. But I vas not there. Insteadt, I—"

"Vot?? It iss imbossible. Somebody blays der choke. But—but nobody *knows* about that rocket. Vhen it vailed, I didn't told nobody. Nobody but me knows—"

"And me, Brofessor."

The Herr Professor sighed heavily. "Offervork. I am going vhat they call battly in der bel—"

"No, Brofessor. This is really me, Mitkey. I can talk now. Chust like you."

"You say you can—I do not belief it. Vhy can I not see you, then. Where are you? Vhy don't you—"

"I am hiding, Brofessor, in der vall chust behind der big hole. I wanted to be sure efferything vas ogay before I showed myself Then you would not get eggcited und throw something at me maybe."

"Vot? Vhy, Mitkey, if it iss really you and I am not asleep or going— Vhy, Mitkey, you know better than to think I might do something like that!"

"Ogay, Brofessor."

Mitkey stepped out of the hole in the wall, and the Professor looked at him and rubbed his eyes and looked again and rubbed his eyes and—

"I am grazy," he said finally. "Red bants he vears yet, und yellow— It gannot be. I am grazy."

"No, Brofessor. Listen, I'll tell you all about."

And Mitkey told him.

Gray dawn, and a small gray mouse still talking earnestly.

"Yes, Brofessor. I see your boint, that you think an intelligent race of mices und an intelligent race of men could not get along side by sides. But it vould not be side by sides; as I said, there are only a ferry few beople in the smallest continent of Australia. Und it vould cost little to bring them back und turn offer that continent to us mices. Ve vould call it Moustralia instead Australia, und ve vould instead of Sydney call der capital Dissney, in honor of—"

"But, Mitkey—"

"But, Brofessor, look vot ve offer for that continent. *All* mices vould go there. Ve civilize a few und the few help us catch others und bring them in to put them under red ray machine, und the others help catch more und build more machines und it grows like a snowball rolling down hill. Und ve sign a nonaggression pact mitt humans und stay on Mous-tralia und raise our own food und—"

"But, Mitkey—"

"Und look vot ve offer you in eggsschange, Herr Brofessor! Ve vill eggsterminate your vorst enemy—der rats. Ve do not like them either. Und vun battalion of vun thousand mices, armed mitt gas masks und small gas bombs, could go right in effery hole after der rats und could eggsterminate effery rat in a city in vun day or two. In der whole world ve could eggsterminate effery last rat in a year, und at the same time catch und civilize effery mouse und ship him to Moustralia, und—"

"But, Mitkey—"

"Vot, Brofessor?"

"It vould vork, but it vould not vork. You could eggsterminate der rats, yess. But how long vould it be before conflicts of interests vould lead to der mices trying to eggsterminate de people or der people trying to eggsterminate der—"

"They vould not dare, Brofessor! Ve could make weapons that vould—"

"You see, Mitkey?"

"But it vould not habben. If men vill honor our rights, ve vill honor—"

The Herr Professor sighed.

"I—I vill act as your intermediary, Mitkey, und offer your

broposition, und— Vell, it iss true that getting rid of rats would be a great boon to der human race. But—”

“Thank you, Brofessor.”

“By der vay, Mitkey. I haff Minnie. Your vife, I guess it iss, unless there vas other mices around. She iss in der other room; I put her there chust before you ariffed, so she would be in der dark und could sleep. You vant to see her?”

“Vife?” said Mitkey. It had been so long that he had really forgotten the family he had perforce abandoned. The memory returned slowly.

“Vell,” he said “—ummm, yess. Ve vill get her and I shall construct quivick a small X-19 procheotor und—Yess, it vill help you in your negotiations mitt der governments if there are sefferal of us already so they can see I am not chust a freak like they might otherwise suspect.”

It wasn't deliberate. It couldn't have been, because the Professor didn't know about Klarloth's warning to Mitkey about carelessness with electricity—“Der new molecular rearranchement of your brain center—it iss unstable, und—”

And the Professor was still back in the lighted room when Mitkey ran into the room where Minnie was in her barless cage. She was asleep, and the sight of her— Memory of his earlier days came back like a flash and suddenly Mitkey knew how lonesome he had been.

“Minnie!” he called, forgetting that she could not understand.

And stepped up on the board where she lay. “Squeak!” The mild electrical current between the two strips of tinfoil got him.

There was silence for a while.

Then: “Mitkey,” called the Herr Professor. “Come on back und ve vill discuss this—”

He stepped through the doorway and saw them, there in the gray light of dawn, two small gray mice cuddled happily together. He couldn't tell which was which, because Mitkey's teeth had torn off the red and yellow garments which had suddenly been strange, confining and obnoxious things.

“Vot on earth?” asked Professor Oberburger. Then he remembered the current, and guessed.

“Mitkey! Can you no longer talk? Iss der—”

Silence.

Then the Professor smiled. “Mitkey,” he said, “my little star-mouse. I think you are more happier now.”

He watched them a moment, fondly, then reached down and flipped the switch that broke the electrical barrier. Of course they didn't know they were free, but when the Professor picked them up and placed them carefully on the floor, one ran immediately for the hole in the wall. The other followed, but turned around and looked back—still a trace of puzzlement in the little black eyes, a puzzlement that faded.

"Gootbye, Mitkey. You vill be happier this vay. Und there vill always be cheese."

"Squeak," said the little gray mouse, and it popped into the hole.

"Gootbye—" it might, or might not, have meant.

THE WINGS OF NIGHT

Astounding,

March

by Lester del Rey (1915-)

Lester del Rey continued (see Volumes 1, 2 and 3 of this series) to produce outstanding science fiction through the early 1940s, and 1942 was highlighted by the remarkable and classic "Nerves" (see page 222). The latter story overshadowed his other work in 1942 but "The Wings of Night" deserves wider attention and reprinting than it had received—it contains all of the idealism and tolerance of the then-new best science fiction of the period, and is a very exciting story besides. If he had published only this story in 1942, it would still have been a memorable year for him.

(Lester and I play a conversational game that has been in progress, more or less, for forty years. The rules are simple. If one of us makes a statement, the other contradicts it. To any contradiction, the proper answer is a slur, which must be topped with a minimum of delay. This sounds as though it will escalate itself in a matter of seconds to a nuclear explosion, but it never does. There is a rigid agreement to the effect that the game can only be played in the presence of other people (especially our wives) who stop us by the fifth exchange. Lately, I notice, they have begun to stop us as soon as one of us says something and the other opens his mouth. We have a great deal of difficulty in persuading people that we are actually the best of friends and that our conversation is always gentle and loving (when we are alone).—IA)

"DAMN ALL MARTIANS!" Fats Welch's thin mouth bit out the words with all the malice of an offended member of a superior race. "Here we are, loaded down with as sweet a

high-rate cargo of iridium as ever came out of the asteroids, just barely over the moon, and that injector starts mis-metering again. If I ever see that bulbous Marshy—”

“Yeah.” Slim Lane groped back with his right hand for the flexible-shaft wrench, found it, and began wriggling and grunting forward into the mess of machinery again. “Yeah. I know. You’ll make mincemeat out of him. Did you ever figure that maybe you were making your own trouble? That maybe Martians are people after all? Lyro Bmachis told you it would take two days to make the overhaul of the injector control hookup, so you knocked him across the field, called his ancestors dirty dogs and gave him just eight hours to finish repairs. Now you expect his rush job to be a labor of love for you— Oh, skip it, Fats, and give me the screwdriver.”

What was the use? He’d been over it all with Fats a dozen times before, and it never got him anywhere. Fats was a good rocket man, but he couldn’t stretch his imagination far enough to forget the hogwash the Reconstruction Empire was dishing out about the Destiny of Man and the Divine Plan whereby humans were created to exploit all other races. Not that it would do Fats much good if he did. Slim knew the value of idealism—none better.

He’d come out of college with a bad dose of it and an inherited fortune big enough for three men, filled with the old crusading spirit. He’d written and published books, made speeches, interviewed administrators, lobbied, joined and organized societies, and been called things that weren’t complimentary. Now he was pushing freight from Mars to Earth for a living, quarter owner of a space-worn freighter. And Fats, who’d come up from a tube cleaner without the help of ideals, owned the other three-quarters.

Fats watched him climb out of the hold. “Well?”

“Nothing. I can’t fix it—don’t know enough about electronics. There’s something wrong with the relays that control the time interval, but the indicators don’t show where, and I’d hate to experiment out here.”

“Make it to Earth—maybe?”

Slim shook his head. “I doubt it, Fats. Better set us down on Luna somewhere, if you can handle her that far. Then maybe we can find out what’s wrong before we run out of air.”

Fats had figured as much and was already braking the ship down working against the spasmodic flutter of the blasts and swearing at the effects of even the moon’s weak gravity. But

the screens showed that he was making progress toward the spot he'd chosen—a small flat plain with an area in the center that seemed unusually clear of debris and pockmarks.

"Wish they'd at least put up an emergency station out here," he muttered.

"They had one once," Slim said. "But nobody ever goes to Luna, and there's no reason for passenger ships to land there. Takes less fuel for them to coast down on their fins through Earth's atmosphere than to jet down here. Freighters like us don't count, anyway. Funny how regular and flat that place is; we can't be over a mile up and I don't see even a meteor scar."

"Luck's with us, then. I'd hate to hit a baby crater and rip off a tube or poke a hole in the shell." Fats glanced at the radio altimeter and fall indicator. "We're gonna hit plenty hard. If— Hey, what the deuce?"

Slim's eyes flicked to the screen just in time to see the flat plain split into two halves and slide smoothly out from under them as they seemed about to touch it; then they were dropping slowly into a crater of some sort, seemingly bottomless and widening out rapidly; the roar of the tubes picked up suddenly. Above them, the overscreens showed a pair of translucent slides closing together again. His eyes stared at the height indicator, neither believing nor doubting.

"Hundred and sixty miles down and trapped in! Tube sounds show air in some amount, at least, even up here. This crazy trap can't be here; there's no reason for it."

"Right now, who cares? We can't go through that slide up there again, so we go down and find out, I guess. Damn, no telling what kind of landing field we'll find when we reach bottom." Fats' lack of excess imagination came in handy in cases like this. He went about the business of jockeying down the enormous crater as if he were docking at York port, too busy with the uncertain blast to worry about what he might find at the bottom. Slim gazed at him in wonder, then fell back to staring at the screens for some indication of the reason behind this obviously artificial trap.

Lhin scratched idly through the pile of dirt and rotten shale, pried out a thin scrap of reddened stone his eyes had missed the first time and rose slowly to his feet. The Great Ones had been good to him, sending a rockslide just when the old beds were wearing thin and poor from repeated digging. His sensitive nostrils told him there was magnesium, ferrous

matter and sulphur in abundance, all more than welcome. Of course, he'd hoped there might be copper, even as little as the end of his finger, but of that there seemed no sign. And without copper—

He shrugged the thought aside as he had done a thousand times before, and picked up his crude basket, now filled half with broken rock and half with the lichen-like growth that filled this end of the crater. One of his hands ground a bit of rotten stone together with shreds of lichen and he popped the mixture into his mouth. Grace to the Great Ones who had sent the slide; the pleasant flavor of magnesium tickled his tongue, and the lichens were full-flavored from the new richness of the soil around them. Now, with a trace of copper, there would have been nothing left to wish for.

With a rueful twitch of his supple tail, Lhin grunted and turned back toward his cave, casting a cursory glance up at the roof of the cavern. Up there, long miles away, a bright glare lanced down, diffusing out as it pierced through the layers of air, showing that the long lunar day was nearing noon, when the sun would lance down directly through the small guarding gate. It was too high to see, but he knew of the covered opening where the sloping walls of the huge valley ended and the roof began. Through all the millennia of his race's slow defeat, that great roof had stood, unsupported except for the walls that stretched out in a circle of perhaps fifty miles diameter, strong and more lasting than even the crater itself; the one abiding monument to the greatness that had been his people's.

He knew without having to think of it that the roof was artificial, built when the last thin air was deserting the moon, and the race had sought a final refuge here in the deepest crater, where oxygen could be trapped and kept from leaking away. In a vague way, he could sense the ages that had passed since then and wonder at the permanence of the domed roof, proof against all time.

Once, as the whole space about him testified, his had been a mighty race. But time had worked on them, aging the race as it had individuals, removing the vigor of their youth and sending in the slow creepers of hopelessness. What good was existence here, cooped up in one small colony, away from their world? Their numbers had diminished and some of their skill had gone from them. Their machines had crumbled and vanished, unreplaced, and they had fallen back to the primitive, digging out the rocks of the crater walls and the lichens

they had cultured to draw energy from the heat and radioactive phosphorescence of the valley instead of sunlight. Fewer young were planted each year, and of the few, a smaller percentage proved fertile, so that their original million fell to thousands, then to hundreds, and finally to a few grubbing individuals.

Only then had they awakened to the danger of extinction, to find it too late. There had been three elders when Lhin was grown, his seed being the only fertile one. Now the elders were gone long years since, and Lhin had the entire length and breadth of the crater to himself. And life was a long series of sleeps and food forages, relieved only by the same thoughts that had been in his mind while his dead world turned to the light and away more than a thousand times. Monotony had slowly killed off his race, but now that its work was nearly done, it had ended. Lhin was content with his type of life; he was habituated and immune to boredom.

His feet had been moving slowly along with the turning of his thoughts, and he was out of the valley proper, near the door of the shelter carved into the rocky walls which he had chosen from the many as his home. He munched another mouthful of rock and lichen and let the diffused sunlight shine on him for a few minutes more, then turned into the cave. He needed no light, since the rock walls about had all been rendered radioactive in the dim youth of his race, and his eyes were adapted to wide ranges of light conditions. He passed quickly through the outer room containing his woven lichen bed and few simple furnishings and back into the combination nursery and workshop, an illogical but ever-present hope drawing him back to the far corner.

But, as always, it was reasonless. The box of rich earth, pulped to a fine loam and watered carefully, was barren of life. There was not even the beginnings of a small red shoot to awaken him to hope for the future. His seed was infertile, and the time when all life would be extinct was growing near. Bitterly he turned his back on the nursery bed.

So little lacking, yet so much! A few hundred molecules of copper salt to eat, and the seeds he grew would be fertile; or those same copper molecules added to the water would render the present seeds capable of growing into vigorous manhood—or womanhood; Lhin's people carried both male and female elements within each member, and could grow the seeds that became their children either alone or with another. So long as one member of the race lived, as many as a

hundred young a year could be reared in the carefully tended incubating soil—if the vital hormone containing copper could be made.

But that, it seemed, was not to be. Lhin went over his laboriously constructed apparatus of hand-cut rock bowls and slender rods bound together into tubes, and his hearts were heavy within him. The slow fire of dried lichen and gummy tar burned still, and slow, drop by drop, liquid oozed from the last tube into a bowl. But even in that there was no slightest odor of copper salts. Well, he had tried that and failed. The accumulation of years of refining had gone into the water that kept the nursery soil damp, and in it there had been too little of the needed mineral for life. Almost dispassionately he threw the permanent metal rolls of his race's science back into their cylinders and began disassembling the chemical part of his workshop.

That meant the other solution, harder, and filled with risks, but necessary now. Somewhere up near the roof, the records indicated, there was copper in small amounts, but well past the breathable concentration of air. That meant a helmet and tanks for compressed air, along with hooks and grapples to bridge the eroded sections of the old trail and steps leading up, instruments to detect the copper and a pump to fill the tanks. Then he must carry many tanks forward, cache them and go up to make another cache, step by step, until his supply line would reach the top and—perhaps—he could find copper for a new beginning.

He deliberately avoided thinking of the time required and the chances of failure. His foot came down on the little bellows and blue flames licked up from his crude forge as he drew out the hunks of refined metal and began heating them to malleability. Even the shaping of it by hand to the patterns of the ancient records was almost impossible, and yet, somehow, he must accomplish it correctly. His race must not die!

He was still working doggedly hours later when a high-pitched note shot through the cave. A meteor, coming into the fields around the sealing slides of the roof, and a large one! In all Lhin's life there had been none big enough to activate the warning screens, and he had doubted that the mechanism, though meant to be ageless and draw sun power until the sun died, was still functioning. As he stood staring at the door senselessly the whistling note came again.

Now, unless he pressed his hand over the inductance grid, the automatic forces would come into play, twisting the me-

teor aside and beyond the roof. But he gave no thought to that as he dashed forward and slapped his fingers against the grilled panel. It was for that he had chosen this rock house, once the quarters of the Watchers who let the few scouting rockets of dim past ages in and out. A small glow from the girl indicated the meteor was through, and he dropped his hand, letting the slides close again.

Then he waited impatiently for it to strike, moving out to the entrance. Perhaps the Great Ones were kind and were answering his prayers at last. Since he could find no copper here, they were sending a token from outer space to him, and who knew what fabulous amounts it might contain—perhaps even as much as he could hold in one hand! But why hadn't it struck? He scanned the roof anxiously, numb with a fear that he had been too late and the forces had thrown it aside.

No, there was a flare above—but surely not such as a meteor that size should make as it sliced down through the resisting air! A sharp stinging whine hit his ears finally, flickering off and on; and that was not the sound a meteor would logically make. He stared harder, wondering, and saw that it was settling downward slowly, not in a sudden rush, and that the flare struck down instead of fading out behind. That meant—could only mean—intelligent control! A rocket!

Lhin's mind spun under the shock, and crazy ideas of his ancestors' return, of another unknown refuge, of the Great Ones' personal visit slid into his thoughts. Basically, though, he was severely logical, and one by one he rejected them. This machine could not come from the barren moon, and that left only the fabled planet lying under the bottom of his world, or those that wandered around the sun in other orbits. Intelligence there?

His mind slid over the records he had read, made when his ancestors had crossed space to those worlds, long before the refuge was built. They had been unable to colonize, due to the oppressive pull of gravity, but they had observed in detail. On the second planet were only squamous things that slid through the water and curious fronds on the little dry land; on his own primary, gigantic beasts covered the globe, along with growth rooted to the ground. No intelligence on those worlds. The fourth, though, was peopled by more familiar life, and like his own evolutionary forerunners, there was no division into animal and vegetable, but both were present in all. Ball-shaped blobs of life had already formed into packs, guided by instinct, with no means of communication. Yet, of

the other worlds known, that seemed the most probable source of intelligence. If, by some miracle, they came from the third, he abandoned hope; the blood lust of that world was too plainly written in the records, where living mountain-like beasts tore at others through all the rolls of etched pictures. Half filled with dread, half with anticipation, he heard the ship land somewhere near and started toward it, his tail curved tightly behind him.

He knew, as he caught sight of the two creatures outside the opened lock of the vessel, that his guess had been wrong. The creatures were bifurcate, like himself, though massive and much larger, and that meant the third world. He hesitated, watching carefully as they stared about, apparently keenly enjoying the air around them. Then one spoke to the other, and his mind shook under a new shock.

The articulation and intonation were intelligent, but the sounds were a meaningless babble. Speech—that! It must be, though the words held no meaning. Wait—in the old records. Silha the Freethinker had touched on some such thought; he had written of remote days when the Lunarites had had no speech and postulated that they had invented the sounds and given them arbitrary meaning, and that only by slow ages of use had they become instinctive in the new-grown infants—had even dared to question that the Great Ones had ordered speech and sound meanings as the inevitable complement of intelligence. And now, it seemed, he was right. Lhin groped up through the fog of his discovery and tightened his thoughts into a beam.

Again, shock struck at him. Their minds were hard to reach, and once he did find the key and grope forward into their thoughts, it was apparent that they could not read his! Yet they were intelligent. But the one on whom his thoughts centered noticed him finally, and grabbed at the other. The words were still harsh and senseless, but the general meaning reached the moon man. "Fats, what's that?"

The other turned and stared at Lhin's approach. "Dunno. Looks like a scrawny three-foot monkey. Reckon it's harmless?"

"Probably, maybe even intelligent. It's a cinch no band of political refugees built this place—nonhuman construction. Hi there!" The one who thought of himself as Slim—massive though he appeared—turned to the approaching Lunarite. "What and who are you?"

"Lhin," he answered, noting surprised pleasure in Slim's mind. "Lhin—me Lhin."

Fats grunted. "Guess you're right, Slim. Seems to savvy you. Wonder who came here and taught him English."

Lhin fumbled clumsily, trying to pin down the individual sounds to their meanings and remember them. "No sahffy Enlish. No who came here. You—" He ran out of words and drew nearer, making motions toward Slim's head, then his own. Surprisingly, Slim got it.

"He means he knows what we're thinking, I guess. Telepathy."

"Yeah? Marshies claim they can do it among themselves, but I never saw one read a human mind. They claim we don't open up right. Maybe this Ream monkey's lying to you."

"I doubt it. Take another look at the radioactivity meter in the viability tester—men wouldn't come here and go home without spreading the good word. Anyway, his name isn't Ream—Lean comes closer to the sound he made, though we'll never get it right." He half sent a thought to Lhin, who dutifully pronounced his name again. "See? His liquid isn't . . . it's a glottal stop. And he makes the final consonant a labial, though it sounds something like our dental. We can't make sounds like that. Wonder how intelligent he is."

He turned back into the ship before Lhin could puzzle out some kind of answer, and was out a moment later with a small bundle under his arm. "Space English code book," he explained to Fats. "Same as they used to teach the Martians English a century ago."

Then to Lhin: "Here are the six hundred most useful words of our language, organized, so it'll beat waiting for you to pick them up bit by bit. You look at the diagramed pictures while I say and think the word. Now. One—w-uh-nn; two—t-ooo. Getting it?"

Fats watched them for a while, half amused, then grew tired of it. "Okay Slim, you molly-coddle the native awhile and see what you learn. I'm going over to the walls and investigate that radioactive stuff until you're ready to start repairs. Wish radios weren't so darned limited in these freighters and we could get a call through."

He wandered off, but Lhin and Slim were hardly aware of it. They were going through the difficult task of organizing a means of communication, with almost no common background, which should have been worse than impossible in

terms of hours. Yet, strange as the word associations and sounds were, and odd as their organization into meaningful groups they were still only speech, after all. And Lhin had grown into life with a highly complex speech as natural to him as breathing. He twisted his lips over the sounds and nailed the meanings down in his mind, one by one, indelibly.

Fats finally found them in Lhin's cave, tracing them by the sound of their voices, and sat down to watch, as an adult might watch a child playing with a dog. He bore Lhin no ill will, but neither could he regard the moon man as anything but some clever animal, like the Martians or the primitives of Venus; if Slim enjoyed treating them as equals, let him have his way for the time.

Lhin was vaguely conscious of those thoughts and others more disturbing, but he was too wrapped up in the new experience of having some living mind to communicate with, after nearly a century of being alone with himself. And there were more important things. He wriggled his tail, spread his arms, and fought over the Earth sounds while Slim followed as best he could.

Finally the Earth man nodded. "I think I get it. All of them have died off except you, and you don't like the idea of coming to a dead end. Um-m-m. I wouldn't either. So now you hope these Great Ones of yours—we call 'em God—have sent us down here to fix things up. How?"

Lhin beamed, his face contorting into a furrowed grimace of pleasure before he realized Slim misinterpreted the gesture. Slim meant well. Once he knew what was needed, perhaps he would even give the copper gladly, since the old records showed that the third world was richest of all in minerals.

"Nra is needed. Life comes from making many simple things one not-simple thing—air, drink, stuff, eat stuff, all that I have, so I live. But to begin the new life, Nra is needed. It makes things begin. The seed has no life—with Nra it lives. But I had no word."

He waited impatiently while Slim digested that. "Sort of a vitamin or hormone, something like Vitamin E₈, eh? Maybe we could make it, but—"

Lhin nodded. Surely the Great Ones were kind. His hearts were warm as he thought of the many seeds carefully wrapped and stored that could be made to grow with the needed copper. And now the Earth man was willing to help. A little longer and all would be well.

"No need to make," he piped happily. "Simple stuff. The

seed or I can make, in us. But we need Nra to make it. See." He pulled a handful of rock from the basket lying near, chewed it carefully, and indicated that it was being changed inside him.

Fats awoke to greater attention. "Do that again, monkey!" Lhin obliged, curious to note that they apparently ate nothing other life had not prepared for them. "Darn. Rocks—just plain rocks—and he eats them. Has he got a craw like a bird, Slim?"

"He digests them. If you've read of those half-plant, half-animal things the Martians came from, you'll know what his metabolism's like. Look, Lhin, I take it you mean an element. Sodium calcium, chlorine? No, I guess you have all those, Iodine, maybe? Hm-m-m." He went over a couple of dozen he could imagine having anything to do with life, but copper was not among them, by accident, and a slow fear crept up into the Lunarite's thoughts. This strange barrier to communication—would it ruin all?

He groped for the answer—and relaxed. Of course, though no common word existed, the element itself was common in structure. Hurriedly he slipped the pages of the code book to a blank one and reached for the Earth man's pencil. Then, as Slim and Fats stared curiously, he began sketching in the atomic structure of copper, particle by particle, from the center out, as the master physicists of his race had discovered it to be.

It meant nothing to them! Slim handed the paper back, shaking his head. "Fella, if I'm right in thinking that's a picture of some atom, we've got a lot to learn back on Earth. *Wheoo!*"

Fats twisted his lips. "If that's an atom, I'm a fried egg. Come on, Slim, it's sleepy time and you've fooled away half a day. Anyhow, I want to talk that radioactive business over with you. It's so strong it'd cook us in half an hour if we weren't wearing these portable nullifiers—yet the monkey seems to thrive on it. I got an idea."

Slim came back from his brown study and stared at his watch. "Darn it! Look, Lhin, don't give up yet; we'll talk all this over tomorrow again. But Fats is right; it's time for us to sleep. So long, fella."

Lhin nodded a temporary farewell in his own tongue and slumped back on his rough bed. Outside, he heard Fats extolling a scheme of some kind for getting out the radioactives with Lhin's help, somehow, and Slim's protesting voice.

But he paid no attention. The atomic structure had been right, he knew, but they were only groping toward it in their science, and their minds knew too little of the subject to enable them to grasp his pictures.

Chemical formulas? Reactions that would eliminate others, one by one? If they were chemists, perhaps, but even Slim knew too little for that. Yet, obviously, unless there was no copper on Earth, there was an answer somewhere. Surely the Great Ones whom they called God would never answer generations of faithful prayer with a mockery! There was an answer, and while they slept, he would find it, though he had to search through every record roll for clues.

Hours later he was trudging across the plain toward the ship, hope again high. The answer, once found, was simple. All elements formed themselves into families and classes. Slim had mentioned sodium, and copper was related in the more primitive tables, such as Earth might use. More important, its atomic number was twenty-nine by theory elementary enough for any race that could build rockets.

The locks were open, and he slipped through both, the wavering half-formed thoughts of the men leading him to them unerringly. Once in their presence, he stopped, wondering about their habits. Already he had learned that what held true for his people was not necessarily the rule with them, and they might not approve of his arousing a sleeper. Finally, torn between politeness and impatience, he squatted on the metal floor, clutching the record roll, his nostrils sampling the metals around him. Copper was not there; but he hadn't expected so rare an element, though there were others here that he failed completely to recognize and guessed were among the heavy ones almost lacking on the moon.

Fats gurgled and scrimmaged around with his arms, yawned, sat up, still half asleep. His thoughts were full of some Earth person of the female element which Lhin had noted was missing in these two, and what he'd do "when he got rich." Lhin was highly interested in the thought pictures until he realized that it would be best not to intrude on these obviously secret things. He withdrew his mind just as the man noted him.

Fats was never at his best while waking up. He came to his feet with a bellow and grabbed for something. "Why, you sneaking little monkey! Trying to sneak up and cut our—"

Lhin squealed and avoided the blow that would have left him a shapeless blob, uncertain of how he had offended, but

warned by caution to leave. Physical fear was impossible for him—too many generations had grown and died with no need of it. But it came as a numbing shock that these beings would actually kill another intelligent person. Was life so cheap on Earth?

"Hey! Hey, Fats, stop it!" Slim had awakened at the sound of the commotion, and a hasty glance showed Lhin that he was holding the other's arms. "Lay off, will you? What's going on?"

But now Fats was fully awake and calming down. He dropped the metal bar and grinned wryly. "I dunno. I guess he meant all right, but he was sitting there with that metal thing in his hands, staring at me, and I figured he meant to cut my throat or something. I'm all right now. Come on back, monkey; it's all right."

Slim let his partner go and nodded at Lhin. "Sure, come back, fella. Fats has some funny ideas about nonhumans, but he's a good-hearted sort, on the whole. Be a good doggie and he won't kick you—he might even scratch your ears."

"Nuts." Fats was grinning, good nature restored. He knew Slim meant it as a crack, but it didn't bother him; what was wrong with treating Marshies and monkeys like what they were? "Whatcha got there, monkey? More pictures that mean nothing?"

Lhin nodded in imitation of their assent gesture and held out the roll to Slim; Fats' attitude was no longer unfriendly, but he was an unknown quantity, and Slim seemed the more interested. "Pictures that mean much, I hope. Here is Nra, twenty-nine, under sodium."

"Periodic table," Slim told Fats. "At least, it looks like one. Get me the handbook, will you? Hm-m-m. Under sodium, No. 29. Sodium, potassium, copper. And it's No. 29, all right. That it, Lhin?"

Lhin's eyes were blazing with triumph. Grace to the Great Ones. "Yes, it is copper. Perhaps you have some? Even a gram, perhaps?"

"A thousand grams, if you like. According to your notions, we're lousy with the stuff. Help yourself."

Fats cut in. "Sure, monkey, we got copper, if that's the stuff you've been yelling about. What'll you pay for it?"

"Pay?"

"Sure, give in return. We help you; you help us. That's fair, isn't it?"

It hadn't occurred to Lhin, but it did seem fair. But what

had he to give? And then, he realized what was in the man's mind. For the copper, he was to work, digging out and purifying the radioactives that gave warmth and light and life to the crater, so painfully brought into being when the place was first constructed, transmuted to meet the special needs of the people who were to live there. And after him, his sons and their sons, mining and sweating for Earth, and being paid in barely enough copper to keep Earth supplied with laborers. Fat's mind filled again with dreams of the other Earth creature. For that, he would doom a race to life without pride or hope or accomplishments. Lhin found no understanding in it. There were so many of those creatures on Earth—why should his enslavement be necessary?

Nor was enslavement all. Eventually, doom was as certain that way as the other, once Earth was glutted with the radioactives, or when the supply here dropped below the vital point, great as the reserve was. He shuddered under the decision forced upon him.

Slim's hand fell on his shoulder. "Fats has things slightly wrong, Lhin. Haven't you, Fats?"

There was something in Slim's hand, something Lhin knew dimly was a weapon. The other man squirmed, but his grin remained.

"You're touched, Slim, soft. Maybe you believe all this junk about other races' equality, but you won't kill me for it. I'm standing pat—I'm not giving away my copper."

And suddenly Slim was grinning, too, and putting the weapon back. "Okay, don't. Lhin can have my share. There's plenty on the ship in forms we can spare, and don't forget I own a quarter of it."

Fats' thoughts contained no answer to that. He mulled it over slowly, then shrugged. Slim was right enough about it, and could do as he wanted with his share. Anyhow—"Okay. Have it your way. I'll help you pry it off wherever it is, or dig it out. How about that wire down in the engine locker?"

Lhin stood silently watching them as they opened a small locker and rummaged through it, studying the engines and controls with half his mind, the other half quivering with ecstasy at the thought of copper—not just a handful, but all he could carry, in pure form, easily turned into digestible sulphate with acids he had already prepared for his former attempt at collecting it. In a year, the crater would be populated again, teeming with life. Perhaps three or four hundred sons left, and as they multiplied, more and yet more.

A detail of the hookup he was studying brought that part of his mind uppermost, and he tugged at Slim's trouser leg. "That . . . that . . . is not good, is it?"

"Huh? No, it isn't, fella. That's what brought us here. Why?"

"Then, without radioactives, I can pay. I will fix it." A momentary doubt struck him. "That is to pay, is it not?"

Fats heaved a coil of wonderful-smelling wire out of the locker, wiped off sweat, and nodded. "That's to pay, all right, but you let those things alone. They're bad enough, already, and maybe even Slim can't fix it."

"I can fix."

"Yeah. What school did you get your degree in electronics from? Two hundred feet in this coil, makes fifty for him. You gonna give it all to him, Slim?"

"Guess so." Slim was looking at Lhin doubtfully, only half watching as the other measured and cut the wire. "Ever touched anything like that before, Lhin? Controls for the ion feed and injectors are pretty complicated in these ships. What makes you think you can do it—unless your people had things like this and you studied the records."

Lhin fought for words as he tried to explain. His people had had nothing like that—their atomics had worked from a different angle, since uranium was almost nonexistent on the moon, and they had used a direct application of it. But the principles were plain to him, even from what he could see outside; he could feel the way it worked in his head.

"I feel. When I first grew, I could fix that. It is the way I think, not the way I learn, though I have read all the records. For three hundred million years, my people have learned it—now I feel it."

"Three hundred million years! I knew your race was old when you told me you were born talking and reading, but—galloping dinosaurs!"

"My people saw those things on your world, yes," Lhin assured him solemnly. "Then I shall fix?"

Slim shook his head in confusion and handed over a tool kit without another word. "Three hundred million years, Fats, and during almost all that time they were farther ahead than we are now. Figure that one out. When we were little crawling things living off dinosaur eggs, they were flitting from planet to planet—only I don't suppose they could stay very long; six times normal gravity for them. And now, just because they had to stay on a light world and their air losses

made them gather here where things weren't normal, Lhin's all that's left."

"Yeah, and how does that make him a mechanic?"

"Instinct. In the same amount of time, look at the instincts the animals picked up. He has an instinct for machinery; he doesn't know all about it, probably, but he can instinctively feel how a thing should work. Add to that the collection of science records he was showing me and the amount of reading he's probably done, and there should be almost nothing he couldn't do to a machine."

There wasn't much use in arguing, Fats decided, as he watched what was happening. The monkey either fixed things or they never would leave. Lhin had taken snips and disconnected the control box completely; now he was taking that to pieces, one thing at a time. With a curious deftness, he unhooked wires, lifted out tubes, uncoupled transformers.

It seemed simple enough to him. They had converted energy from the atomic fuel, and they used certain forces to ionize matter, control the rate of ionization, feed the ions to the rocket tubes, and force them outward at high speed through helices. An elementary problem in applied electronics to govern the rate and control the ionization forces.

With small quick hands he bent wires into coils, placed other coils in relation, and coupled a tube to the combination. Around the whole, other coils and tubes took shape, then a long feeder connected to the pipe that carried the compound to be ionized, and bus bars to the energy intake. The injectors that handled the feeding of ions were needlessly complicated, but he let them alone, since they were workable as they were. It had taken him less than fifteen minutes.

"It will now work. But use care when you first try it. Now it makes all work, not a little as it did before."

Slim inspected it. "That all? What about this pile of stuff you didn't use?"

"There was no need. It was very poor. Now it is good." As best he could, he explained to Slim what happened when it was used now; before, it would have taken a well-trained technician to describe, even with the complicated words at his command. But what was there now was the product of a science that had gone beyond the stumbling complications of first attempts. Something was to be done, and was done, as simply as possible. Slim's only puzzle was that it hadn't been done that way in the first place—a normal reaction, once the final simplification is reached. He nodded.

"Good. Fats, this is the business. You'll get about 99.99% efficiency now, instead of the 20% maximum before. You're all right, Lhin."

Fats knew nothing of electronics, but it had sounded right as Lhin explained, and he made no comment. Instead, he headed for the control room. "Okay, we'll leave here, then. So long, monkey."

Slim gathered up the wire and handed it to Lhin, accompanying him to the air lock. On the ground as the locks closed, the moon man looked up and managed an Earth smile. "I shall open the doors above for you to go through. And you are paid, and all is fair, not so? Then—so long, Slim. The Great Ones love you that you have given my people back to me."

"'Dios," Slim answered, and waved, just before the doors came shut. "Maybe we'll be back sometime and see how you make out."

Back at the cave, Lhin fondled the copper and waited for the sounds the rockets would make, filled with mixed emotions and uncertainties. The copper was pure ecstasy to him, but there were thoughts in Fats' mind which were not all clear. Well, he had the copper for generations to come; what happened to his people now rested on the laps of the Great Ones.

He stood outside the entrance, watching, the now-steady rocket blast upward and away, carrying with it the fate of his race. If they told of the radioactives, slavery and extinction. If they remained silent, perhaps a return to former greatness, and passage might be resumed to other planets, long deserted even at the height of their progress; but now planets bearing life and intelligence instead of mere jungles. Perhaps, in time, and with materials bought from other worlds with ancient knowledge, even a solution that would let them restore their world to its ancient glory, as they had dreamed before hopelessness and the dark wings of a race's night had settled over them.

As he watched, the rocket spiraled directly above him, cutting the light off and on with a shadow like the beat of wings from the mists of antiquity, when winged life had filled the air of the moon. An omen, perhaps, those sable wings that reached up and passed through the roof as he released the slides, then went skimming out, leaving all clear behind. But whether a good omen or ill, he had not decided.

He carried the copper wire back to the nursery.

And on the ship, Slim watched Fats wiggle and try to think, and there was amusement on his face. "Well, was he good? As good as any human, perhaps?"

"Yeah. All right, better. I'll admit anything you want. He's as good as I am—maybe he's better. That satisfy you?"

"No." Slim was beating the iron while it was hot. "What about those radioactives?"

Fats threw more power into the tubes, and gasped as the new force behind the rockets pushed him back into his seat. He eased up gently, staring straight ahead. Finally he shrugged and turned back to Slim.

"Okay, you win. The monkey keeps his freedom and I keep my lip buttoned. Satisfied?"

"Yeah." Slim was more than satisfied. To him, also, things seemed an omen of the future, and proof that idealism was not altogether folly. Some day the wings of dark prejudice and contempt for others might lift from all Earth's Empire, as they were lifting from Fats' mind. Perhaps not in his time, but eventually; and intelligence, not race, would rule.

"Well satisfied, Fats," he said. "And you don't need to worry about losing too much. We'll make all the money we can ever spend from the new principles of Lhin's hookup; I've thought of a dozen applications already. What do you figure on doing with your share?"

Fats grinned. "Be a damned fool. Help you start your propaganda again and go around kissing Marshies and monkeys. Wonder what our little monkey's thinking."

Lhin wasn't thinking, then; he'd solved the riddle of the factors in Fats' mind, and he knew what the decision would be. Now he was making copper sulphate, and seeing dawn come up where night had been. There's something beautiful about any dawn, and this was very lovely to him.

COOPERATE-OR ELSE!

Astounding,

April

by A. E. van Vogt (1912-)

The history of the "Golden Age" of science fiction is really the history of the stories and novels that were published in Astounding, although fine stories also appeared elsewhere. And, while it is true that this period was dominated by a half-dozen or so individuals, certain writers tended to dominate particular years. 1941 was the Year of Heinlein, and it can be argued that 1942 was the Year of van Vogt. In addition to the three stories in this volume, Astonishing also published (among others of his) "Recruiting Station" (March), and "Secret of Unattainable" (July), both solid stories, and van Vogt achieved great popularity as a master of the intricate and wonder-producing space opera.

The theme of "Cooperate—Or Else!" is well summed up in its title, and the story has an important message—a community of interests based on fear can still be a community.

(One of the values of an anthology series like this, and the particular value that strongly attracted me to the notion is that a series of great stories is placed firmly in its historical and social background through Marty's general introduction. The virtues of cooperation between what would seem natural enemies is a reflection of the fact that in 1942 the Soviet Union was in firm alliance with the United States and Great Britain as all three desperately fought Nazi Germany. Now if only it were possible to form an alliance as firm and much longer-lasting against the danger that beset us today—far more dangerous and far more difficult to defeat than even the Nazis were, since the present dangers are inchoate and unpersonified; just things like resource depletion, overpopulation, pollution, the arms buildup and so on.—IA)

As the spaceship vanished into the steamy mists of Eristan II, Professor Jamieson drew his gun. He felt physically sick, battered, by the way he had been carried for so many long moments in the furious wind stream of the great ship. But the sense of danger held him tense there in the harness that was attached by metal cables to the now gently swaying anti-gravity plate above him. With narrowed eyes, he stared up at the ezwal which was peering cautiously down at him over the edge of the anti-gravity plate.

Its three-in-line eyes, gray as dully polished steel, gazed at him, unwinking; its massive blue head poised there alertly and—Jamieson knew—ready to jerk back the instant it read in his thoughts an intention of shooting.

"Well," said Jamieson harshly, "here we are, both of us about a hundred thousand years from our respective home planets. And we're falling down into a primitive jungle hell that you, with only your isolated life on Carson's Planet to judge by, cannot begin to imagine despite your ability to read my thoughts. Even a six-thousand-pound ezwal hasn't got a chance down there—alone!"

A great, long-fingered, claw-studded paw edged gingerly over the side of the raft, flicked down at one of the four metal cables that supported Jamieson's harness. There was a bright, steely *ping*. The cable parted like rotted twine from the impact of that one cutting blow.

Like a streak of blurred light, the enormous arm jerked back out of sight. And then there was only the great head and the calm, unwinking eyes peering down at him. Finally, a thought penetrated to Jamieson, a thought cool and unhurried:

"You and I, Professor Jamieson, understand each other very well. Of the hundred-odd men on your ship, only you remain alive. Out of all the human race, therefore, only you know that the ezwals of what you call Carson's Planet are not senseless beasts, but intelligent beings. I could have stayed on the ship, and so eventually reached home. But rather than take the slightest risk of your escaping the jungle dangers below I took the desperate chance of jumping on top of this anti-gravity raft just as you were launching yourself out of the lock. What I cannot clearly understand is why you didn't

escape while I was still battering down the control-room door. There is a blurred fear picture in your mind, but—"

Jamieson was laughing, a jarring sound in his own ears, but there was genuine amusement in the grim thoughts that accompanied it. "You poor fool!" he choked at last. "You still don't realize what you're falling down to. While you were hammering away at that door, the ship was flying over the biggest ocean on this planet. All those glints of water down there are really continuation of the ocean, and every pool is swarming with malignant beasts. And, somewhere ahead of us, are the Demon Straits, a body of water about fifty miles wide that separates this ocean-jungle from the mainland beyond. Our ship will crash on that mainland, about a thousand miles from here, I should say. To reach it, we've got to cross that fifty miles of *thing*-infested area. Now you know why I was waiting, and why you had a chance to jump on to that anti-gravity plate. I—"

His voice collapsed with an "*ugh*" of amazement as, with the speed of a striking snake, the *ezwal* twisted up, a rearing, monstrous blue shape of frightful fangs and claws that reached with hideous power at a gigantic bird. The bird was diving straight down at the shining surface of the anti-gravity raft.

It did not swoop aside. Jamieson had a brief, terrifying glimpse of its merciless, protruding, glassy eyes, and of the massive, hooked, pitchfork-long claws, tensing for the thrust at the *ezwal*; and then—

The crash set the raft tossing like a chip in stormy waters. Jamieson swung with dizzy speed from side to side. The roar of the wind from the smashing power of those mighty wings was like thunder that stunned his brain. With a gasp, he raised his gun. The red flame of it reached hungrily at one of those wings. The wing turned a streaky black, collapsed; and, simultaneously, the bird was literally flung from the raft by the raging strength of the *ezwal*.

It plunged down, down, became a blurred dot in the mist and was lost against the dark background of the land mass below.

Above Jamieson, the *ezwal*, dangerously off balance, hung poised over the edge of the raft. Four of its combination leg-arms pawed the air uselessly; the remaining two fought with bitter effort at the metal bars on top of the raft—and won. The great body drew back, until, once again, only the mas-

sive blue head was visible. Jamieson lowered his gun in grim good humor.

"You see," he said, "even a bird was almost too much for us—and I could have burned your belly open. I didn't because maybe it's beginning to penetrate your head that we've got to postpone our private quarrel and fight together if we ever hope to get out of the hell of jungle and swamp below."

The answering thought was as cold as the sleet-gray eyes that stared down at him so steadily:

"Professor Jamieson, what you *could* have done was unimportant to me who knew what you *would* do. As for your kind offer to ally yourself with me, I repeat that I am here to see you dead, not to protect your pitiful body. You will, therefore, refrain from further desperate appeals and meet your fate with the dignity becoming a scientist."

Jamieson was silent. A thin, warm, wet wind breathed against his body, bringing the first faint, obscene odors from below. The raft was still at an immense height, but the steamy mists that clung with a limp, yet obscuring strength to this primeval land had yielded some of their opaqueness. Patches of jungle and sea that, a few minutes before, had been blurred by that all-pervading fog, showed clearer now, a terrible, patternless sprawl of dark trees alternating with water that shone and flashed in the probing sunlight.

Fantastic, incredible scene. As far as the eye could see into the remote mists to the north, there was steaming jungle and foggy, glittering ocean—the endless, deadly reality that was Eristan II. And, somewhere out there, somewhere in the dimness beyond the concealing weight of steam, those apparently interminable jungles ended abruptly in the dark, ugly swell of water that was the Demon Straits!

"So," said Jamieson at last, softly, "you think you're going to get through. All your long life, all the long generations of your ancestors, you and your kind have depended entirely on your magnificent bodies for survival. While men herded fearfully in their caves, discovering fire as a partial protection, desperately creating weapons that had never before existed, always a bare jump ahead of violent death—all those millions of years, the ezwal of Carson's Planet roamed his great, fertile continents, unafraid, matchless in strength as in intellect, needing no homes, no fires, no clothing, no weapons, no—"

"You will agree," the ezwal interrupted coolly, "that adaptation to a difficult environment must be one of the goals of the superior being. Human beings have created what they call

civilization, which is actually merely a material barrier between themselves and their environment, so vast and unwieldy that keeping it going occupies the entire existence of the race. Individually, man is a frivolous, fragile, inconsequential *slave*, who tugs his mite at the wheel, and dies wretchedly of some flaw in his disease-ridden body. Unfortunately, this monstrous, built-up weakling with his power lusts and murderous instincts is the greatest danger extant to the sane, healthy races of the Universe. He must be prevented from contaminating his betters."

Jamieson laughed curtly. "But you will agree, I hope, that there is something wonderful about an insignificant, fearful jetsam of life fighting successfully against all odds, aspiring to all knowledge, finally attaining the very stars!"

"Nonsense!" The answer held overtones of brittle impatience. "Man and his thoughts constitute a disease. As proof during the past few minutes you have been offering specious arguments, apparently unbiased, actually designed to lead once more to an appeal for my assistance, an intolerable form of dishonesty. As further evidence I need but anticipate intellectually the moment of our landing. Assuming that I make no attempt to harm you, nevertheless your pitiful body will be instantly and, thereafter continuously in deadly danger, while I—you must admit that, though there are beasts below physically stronger than I, the difference is not so great that my intelligence, even if it took the form of cunning flight, would more than balance the weakness. You will admit furthermore—"

"I admit nothing!" Jamieson snapped. "Except that you're going to get the surprise of your life. And you're going to regret beyond all your present capacity for emotionalism the lack of those very artificialities you despise in man. I do not mean material weapons, but—"

"What you mean is unimportant. I can see that you intend to persist in this useless, mendacious type of reasoning, and you have convinced me that you will never emerge alive from that island jungle below. Therefore—"

The same, tremendous arm that a few minutes before had torn steel chain flashed into sight and downward in a single coordinated gesture.

The two remaining cables attached to Jamieson's harness parted like wet paper; and so great was the force of the blow that Jamieson was jerked a hundred feet parallel to the dis-

tant ground before his long, clenched body curved downward for its terrific fall.

A thought, cool with grim irony, struck after him:

"I notice that you are a very cautious man, professor, in that you have not only a packsack, but a parachute strapped to your back. This will enable you to reach ground safely, but your landing will be largely governed by chance. Your logical mind will doubtless enable you to visualize the situation. Good-bye and—bad luck!"

Jamieson strained at the thin, strong ropes of his parachute, his gaze narrowed on the scene below. Through the now almost transparent mist, and somewhat to the north, was a green-brown blaze of jungle. If he could get there—

He tugged again at the ropes, and with icy speculation watched the effect, calculated the mathematical possibilities. He was falling slowly; that would be the effect of the heavy air of this planet: pressure eighteen pounds per square inch at sea level.

Sea level! He smiled wryly, without humor. Sea level was approximately where he would be in a very few minutes. There was, he saw, no sea immediately beneath him. A few splotches of water, yes, and a straggle of trees. The rest was a sort of clearing, except that it wasn't exactly. It had a strange, grayish, repellent appearance like—

The terrible shock of recognition drained the blood from his cheeks. His mind shrank as from an unthinkable lecherous thought. In panic he tore at the ropes, as if by sheer physical strength he would draw the tantalizingly near jungle to him. That jungle, that precious jungle! It might contain horrors, but at least they were of the future, while that hellish stuff directly below held no future, nothing but a gray, quagmire trap, thick mud choking—

Abruptly, he saw that the solid mass of trees was beyond his reach. The parachute was less than five hundred feet above that deadly, unclean spread of mud. The jungle itself—stinking, horrible jungle, blatantly exuding the sharp, evil odors of rotting vegetation, yet suddenly the most desirable of places—was about the same distance to the northwest.

To make it would require a forty-five-degree descent. Carefully, he manipulated the rope controls of the parachute. It caught the wind like a glider; the jungle drew closer, closer—

He landed triumphantly in a tiny straggle of trees, a little island separated from the main bulk of forest by less than a hundred and fifty feet.

The island was ten feet long by eight wide; four trees, the longest about fifty feet tall, maintained a precarious existence on its soggy, wet, comparatively firm base.

Four trees, representing a total of about a hundred and eighty feet. Definitely enough length. But—his first glow of triumph began to fade—without a crane to manipulate three of those trees into place, the knowledge that they represented safety was utterly useless.

Jamieson sat down, conscious for the first time of the dull ache in his shoulders, the strained tenseness of his whole body, a sense of depressing heat. He could see the sun, a white blob barely visible through the white mists that formed the atmosphere of this deadly, fantastic land.

The blur of the sun seemed to fade into remoteness; a vague darkness formed in his mind; and then a sharp, conscious thought that he had been asleep.

He opened his eyes with a start. The sun was much lower in the eastern sky and—

His mind stopped from the sheer shock of discovery. Instantly, however, it came alive, steady, cool, despite the vast, first shock of his amazement.

What had happened was like some fantasy out of a fairy story. The four trees, with the tattered remains of his parachute still clinging to them, towered above him. But his plan for them had taken form while he slept.

A bridge of trees, thicker, more solid than any the little island could have produced, stretched straight and strong from the island to the mainland. There was no doubt, of course, as to who had performed that colossal feat: the ezwal was standing unconcernedly on two of its six legs, leaning manlike against the thick trunk of a gigantic tree. Its thought came:

"You need have no fear, Professor Jamieson. I have come to your point of view. I am prepared to assist you to reach the mainland and to cooperate with you thereafter. I—"

Jamieson's deep, ungracious laughter cut off the thought. "You damned liar!" the scientist said finally. "What you mean is that you've run up against something you couldn't handle. Well, that's all right with me. So long as we understand each other, we'll get along."

The snake slid heavily out of the jungle, ten feet from the mainland end of the bridge of trees, thirty feet to the right of the ezwal. Jamieson, scraping cautiously toward the center of the bridge, saw the first violent swaying of the long, luscious

jungle grass—and froze where he was as the vicious, fantastic head reared into sight, followed by the first twenty feet of that thick, menacing body.

Briefly, the great head, in its swaying movement, was turned directly at him. The little pig eyes seemed to glare straight into his own stunned, brown eyes. Shock held him, sheer, unadulterated shock at the incredibly bad luck that had allowed this deadly creature to find him in such an immeasurably helpless position.

His paralysis there, under those blazing eyes, was a living, agonizing thing. Tautness struck like fire into every muscle of his body. It was an instinctive straining for rigidity, unnatural and terrible—but it worked.

The fearsome head whipped aside, fixed in eager fascination on the ezwal, and took on a rigidity all its own.

Jamieson relaxed; his brief fear changed to brief, violent anger; he projected a scathing thought at the ezwal:

"I understood you could sense the approach of dangerous beasts by reading their minds."

No answering thought came into his brain. The giant snake flowed farther into the clearing; and before that towering, horned head rearing monstrosly from the long, titanicly powerful body, the ezwal backed slowly, yielding with a grim reluctance to the obvious conviction that it was no match for this vast creature.

Cool again, Jamieson directed an ironic thought at the ezwal:

"It may interest you to know that as chief scientist of the Interstellar Military Commission, I reported Eristan II unusable as a military base for our fleet; and there were two main reasons: one of the damnedest flesh-eating plants you ever saw, and this pretty little baby. There's millions of both of them. Each snake breeds hundreds in its lifetime, so they can't be stamped out. They're bisexual, attain a length of about a hundred and fifty feet and a weight of ten tons."

The ezwal, now some fifty feet away from the snake, stopped and, without looking at Jamieson, sent him a tight, swift thought.

"Its appearance did surprise me, but the reason is that its mind held only a vague curiosity about some sounds it had heard, no clear, sharp thought such as an intention to murder. But that's unimportant. It's here; it's dangerous. It hasn't seen you yet, so act accordingly. It doesn't think it can get

me, the problem remains essentially yours; the danger is *all* yours."

The ezwal concluded almost indifferently: "I am willing to give you limited aid in any plan you might have, but please don't offer any more nonsense about our independence. So far there's been only one dependent. I think you know who it is."

Jamieson was grim. "Don't be too sure that you're not in danger. That fellow looks muscle-bound, but when he starts moving, he's like a steel spring for the first three or four hundred feet—and you haven't got that much space behind you."

"What do you mean? I can run four hundred feet in three seconds. Earth time."

Coldly, the scientist whipped out: "You could, *if you had four hundred feet in which to run*. But you haven't. I've just been forming a mental picture of this edge of jungle, as I saw it before I landed.

"There's about a hundred and fifty feet of jungle, then a curving shore of mud plain, a continuation of this mud here. The curve swings back this way, and cuts you off neatly on this little outjutting of jungle. To get clear of the snake, you've got to dart past him. Roughly, your clearance is a hundred and fifty feet all around—and it isn't enough! Interdependent? You're damned right we are. Things like this will happen a thousand times a year on Eristan II."

There was a startled silence; finally: "Why don't you turn your atomic gun on it—burn it?"

"And have it come out here, while I'm helpless? These big snakes are born in this mud, and live half their lives in it. It would take five minutes to burn off that tough head. By that time I'd be swallowed and digested."

The brief seconds that passed then were pregnant with reluctant desperation. But there could be no delay. Swiftly the grudging request came:

"Professor Jamieson, I am open to suggestions—and *hurry!*"

The depressing realization came to Jamieson that the ezwal was once more asking for his assistance, *knowing* that it would be given; and yet it itself was giving no promise in return.

And there was no time for bargaining. Curtly, he projected:

"It's the purest case of our acting as a team. The snake has

no real weakness—except possibly this: Before it attacks its head will start swaying. That's almost a universal snake method of hypnotizing victims into paralysis. Actually, the motion is also partially self-hypnotizing. At the earliest possible moment after it begins to sway, I'll burn its eyes out—and you get on its back, *and hang on*. Its brain is located just behind that great horn. Claw your way there, and eat in while I burn."

The thought scattered like a chaff, as the tremendous head began to move. With a trembling jerk, Jamieson snatched his gun—

It was not so much, then, that the snake put up a fight, as that it wouldn't die. Its smoking remains were still twisting half an hour later when Jamieson scrambled weakly from the bridge of trees and collapsed on to the ground.

When finally he climbed to his feet, the ezwal was sitting fifty feet under a clump of trees, its middle legs also on the ground, its forelegs folded across its chest—and it was contemplating him.

It looked strangely sleek and beautiful in its blue coat and in the very massiveness of its form. And there was comfort for him in the knowledge that, for the time being at least, the mighty muscles that rippled beneath that silk-smooth skin were on his side.

Jamieson returned the ezwal's stare steadily; finally he said:

"What happened to the anti-gravity raft?"

"I abandoned it thirty-five miles north of here."

Jamieson hesitated; then: "We'll have to go to it. I practically depowered my gun on that snake. It needs metal for recharging; and that raft is the only metal in bulk that I know of."

He was silent again; then softly: "One more thing. I want your word of honor that you won't even attempt to harm me until we are safely on the other side of the Demon Straits!"

"You'd accept my word?" The steel-gray, three-in-line eyes meditated on him curiously.

"Yes."

"Very well, I give it."

Jamieson shook his head, smiling darkly. "Oh, no, you don't, not as easily as that."

"I thought you said you'd accept my word." Peevishly.

"I will, but in the following phraseology." Jamieson stared with grim intentness at his mighty and deadly enemy. "I want

you to swear by the sun that rises and by the green, fruitful earth, by the joys of the contemplative mind and the glory of immortal life—”

He paused. “Well?”

There was a gray fire in the ezwal’s gaze, and its thought had a ferocious quality when finally it replied: “You are, Professor Jamieson, even more dangerous than I thought. It is clear there can be no compromise between us.”

“But you’ll make the limited promise I ask for?”

The gray eyes dulled strangely; long, thin lips parted in a snarl that showed great, dark fangs.

“No!” Curtly.

“I thought,” said Jamieson softly, “I ought to get that clear.”

No answer. The ezwal simply sat there, its gaze fixed on him.

“Another thing,” Jamieson went on. “Stop pretending you can read all my thoughts. You didn’t know that I knew about your religion. I’ll wager you can only catch my sharpest idea-forms, and those particularly when my mind is focused on speech.”

“I made no pretenses,” the ezwal replied coolly. “I shall continue to keep you as much in the dark as possible.”

“The doubt will, of course, harass my mind,” said Jamieson, “but not too much. Once I accept a theory, I act accordingly. If I should prove wrong, there remains the final arbiter of my atomic gun against your strength. I wouldn’t bet on the victor.

“But now”—he hunched his long body, and strode forward—“let’s get going. The swiftest method, I believe, would be for me to ride on your back. I could tie a rope from my parachute around your body just in front of your middle legs and by hanging on to the rope keep myself from falling off. My only qualification is that you must promise to let me off before making any hostile move. Agreeable?”

The ezwal hesitated, then nodded: “For the time being.”

Jamieson was smiling, his long, spare yet strong face ironical.

“That leaves only one thing: What did you run up against that made you change your mind about killing me immediately? Could it have been something entirely beyond the isolated, static, aristocratic existence of the ezwal?”

“Get on my back!” came the snarling thought. “I desire no lectures, nor any further sounds from your rasping voice. I

fear nothing on this planet. My reasons for coming back have no connection with any of your pitiful ideas; and it would not take much to make me change my mind. Take warning!"

Jamieson was silent, startled. It had not been his intention to provoke the ezwal. He'd have to be more cautious in the future, or this great animal, bigger than eight lions, deadlier than a hundred, might turn on him long before it itself intended.

It was an hour later that the long, fish-shaped spaceship swung out of the steamy mists that patrolled the skies of Er-istan II. It coasted along less than a thousand feet up, cruel-looking as a swordfish with its finely pointed nose.

The explosive thought of the ezwal cut into Jamieson's brain: "Professor Jamieson, if you make so much as a single effort at signaling, you die."

Jamieson was silent, his mind held stiff and blank, after one mental leap. As he watched, the great, half-mile-long ship sank visibly lower and, as it vanished beyond the rim of the jungle ahead, there was no doubt that it was going to land.

And then the ezwal's thoughts came again, sly now, almost exultant: "It's no use trying to hide it—because now that the actuality is here I remember that your dead companions had awareness of another spaceship in the back of their minds."

Jamieson swallowed the hard lump in his throat. There was a sickness in him, and vast rage at the incredibly bad luck of this ship coming here—now!

Miserably, he gave himself to the demanding rhythm of the ezwal's smooth gallop; and for a while there was only that odor-tainted wind, and the pad of six paws, a dull, flat flow of sound. Around him the dark jungle, the occasional, queer *lap, lap* of treacherous, unseen waters. And it was all there, the strangeness, the terribleness of this wild ride of a man on the back of a blue-tinted, beast-like being that hated him—and knew about that ship.

At last, grudgingly, he yielded. He said snappishly, as if his words might yet snatch victory from defeat: "Now I know, anyway, that your thought-reading ability is a damned sketchy thing. You didn't begin to suspect why you were able to conquer my ship so easily."

"Why should I?" The ezwal was impatient. "I remember now there was a long period when I caught no thoughts, only an excess of energy tension, abnormally more than were customary from your engines. That must have been when you

speeded up. Then I noticed the cage door was ajar—and forgot everything else.”

The scientist nodded, gloom a sickish weight on him. “We received some awful buffeting, nothing palpable, of course, because the interstellars were full on. But, somewhere, there must have been a blow that knocked our innards out of alignment.

“Afterwards, we watched for dangers from outside; and so you, on the inside, got your chance to kill a hundred men, most of them sleeping.”

He tensed his body ever so carefully, eyes vaguely as possible on the limb of the tree just ahead, concentrating with enormous casualness on the idea of ducking under it. Somehow, his real purpose leaked from his straining brain.

In a single convulsion of movement, like a bucking horse, the ezwal reared. Shattering violence of movement! Like a shot from a gun, Jamieson was flung forward *bang* against that steel-hard back. Stunned, dizzy, he fought for balance—and then it was over.

The great animal plunged aside into a thick pattern of jungle, completely away from the protruding limb that had momentarily offered such sweet promise of safety. It twisted skilfully between two giant trees, and emerged a moment later on to the beach of a long, glittering bay of ocean.

Fleet as the wind, it raced along the deserted sands, and then on into the thickening jungles beyond. No thought came from it, not a tendril of triumph, no indication of the tremendous victory it had just won.

Jamieson said sickly: “I made that attempt because I know what you’re going to do. I admit we had a running fight with that Rull cruiser. But you’re crazy if you think they mean advantage for you. Rulls are different. They come from another galaxy. They’re—”

“Professor!” The interrupting thought was like metal in the sheer, vibrating force of it. “Don’t dare try to draw your gun to kill yourself. One false move, and I’ll show you how violently and painfully a man can be disarmed.”

“You promised,” Jamieson also mumbled, “to make no hostile move—”

“And I’ll keep that promise—to the letter, after man’s own fashion, *in my own good time*. But now—I gathered from your mind that you think these creatures landed because they detected the minute energy discharge of the anti-gravity raft.”

“Pure deduction.” Curtly. “There must be some logical rea-

son, and unless you shut off the power as I did on the spaceship—”

“I didn’t. Therefore, that is why they landed. Their instruments probably also registered your use of the gun on the snake. Therefore they definitely know someone is here. My best bet, accordingly, is to head straight for them before they kill me accidentally. I have no doubt of the welcome I shall receive when they see my captive, and I tell them I and my fellow ezvals are prepared to help drive man from Carson’s Planet. And you will have gotten off my back unharmed—thus my promise.”

The scientist licked dry lips. “That’s bestial,” he said finally. “You know damned well from reading my mind that Rulls eat human beings. Earth is one of the eight planets in this galaxy whose flesh is palatable to these hell-creatures—”

The ezwal said coldly: “I have seen men on Carson’s Planet eat ezvals with relish. Why shouldn’t men in turn be eaten by other beings?”

Jamieson was silent, a shocked silence at the hatred that was here. The flintlike thought of the other finished:

“You may not realize how important it is that no word of ezwal intelligence get back to Earth during the next few months, but we ezvals know. I want you dead!”

And still there was hope in him. He recognized it for what it was: That mad, senseless hope of a man still alive, refusing to acknowledge death till its gray chill lay cold on his bones.

A crash of brush roused him out of himself. Great branches of greater trees broke with wheezing unwillingness. A monstrous reptile head peered at them over a tall tree.

Jamieson had a spine-cooling glimpse of a scaly, glittering body; eyes as red as fire blazed at him—and then that lumbering nightmare was far behind, as the ezwal raced on, contemptuous, terrible in its unheeding strength.

And after a moment, then, in spite of hideous danger, in spite of his desperate conviction that he must convince the ezwal how wrong it was—admiration flared inside him, a wild, fascinated admiration.

“By God!” he exclaimed. “I wouldn’t be surprised if you really could evade the terrors of this world. In all my journeys through space, I’ve never seen such a perfect combination of mind and magnificent muscle.”

“Save your praise,” sneered the ezwal.

Jamieson hardly heard. He was frowning in genuine thoughtfulness: “There’s a sabre-toothed, furred creature

about your size and speed that might damage you, but I think you can outrun or outfight all the other furred animals. Then there are the malignant plants, particularly a horrible creeper affair—it's not the only intelligent plant in the galaxy, but it's the smartest. You'd need my gun if you got tangled up with one of those.

"You could evade them, of course, but that implies ability to recognize that one's in the vicinity. There are signposts of their presence but"—he held his mind as dim as possible, and smiled grimly—"I'll leave that subject before you read the details in my brain.

"That leaves the great reptiles; they can probably catch you only in the water. That's where the Demon Straits would be a mortal handicap."

"I can swim," the ezwal snapped, "fifty miles in three hours with you on my back."

"Go on!" The scientist's voice was scathing. "If you could do all these things—if you could cross oceans and a thousand miles of jungle, why did you return for me, knowing, as you must now know, that I could never reach my ship alone? Why?"

"It's dark where you're going," the ezwal said impatiently, "and knowledge is not a requirement for death. All these fears of yours are but proof that man will yield to unfriendly environment where he would be unflinching in the face of intelligent opposition.

"And that is why your people must not learn of ezwal intelligence. Literally, we have created on Carson's Planet a dumb, beast-like atmosphere where men would eventually feel that nature was too strong for them. The fact that you have refused to face the nature-environment of this jungle planet of Eristan II and that the psycho-friction on Carson's Planet is already at the factual of point 135 is proof that—"

"Eh?" Jamieson stared at the gleaming, blue, rhythmically bobbing head. "You're crazy. Why, 135 would mean—twenty-five—thirty million. The limit is point thirty-eight."

"Exactly," glowed the ezwal, "thirty million dead."

A gulf was opening before Jamieson's brain, a black realization of where this—monstrous—creature's thoughts were leading. He said violently:

"It's a damned lie. My reports show—"

"Thirty million!" repeated the ezwal with a deadly satisfaction. "And I know exactly where that means in your terms of psycho-friction: point 135 as compared to a maximum safety

tension limit of point 38. That limit, of course, obtains when nature is the opponent. If your people discovered the cause of their agony was an intelligent race, the resistance would go up to point 184—and we'd lose. You didn't know we'd studied your psychology so thoroughly."

Whitely, shakily, Jamieson replied: "In five years, we'll have a billion population on Carson's Planet, and the few ezwal that will have escaped will be a small, scattered, demoralized—"

"In five *months*," interrupted the ezwal coldly, "man will figuratively explode from our planet. Revolution, a blind mob impulse to get into the interstellar transports at any cost, mad flight from intolerable dangers. And, added to everything, the sudden arrivals of the Rull warships to assist us. It will be the greatest disaster in the long, brutal history of conquering man."

With a terrible effort, Jamieson caught himself into a tight matter-of-factness: "Assuming all this, assuming that machines yield to muscle, what will you do with the Rulls after we're gone?"

"Just let them dare remain!"

Jamieson's brief, titanic effort at casualness collapsed into a wave of fury: "Why, you blasted fools, a man beat the Rulls to Carson's Planet by less than two years. While you stupid idiots interfered with us on the ground, we found long, delaying actions in the deeps of space, protecting you from the most murderous, ruthless, unreasonable things that the Universe ever spawned."

He stopped, fought for control, said finally with grim effort at rational argument, "We've never been able to drive the Rull from any planet where he has established himself. And he drove us from three major bases before we realized the enormousness of the danger, and stood firm everywhere regardless of military losses."

He stopped again, conscious of the blank, obstinate, contemptuous wall that was the mind of this ezwal.

"Thirty billion!" he said almost softly, half to himself. "Wives, husbands, children, lovers—"

A black anger blotted out his conscious thought. With a single lightning-swift jerk on his arm, he drew his atomic gun, pressed its muzzle against the great blue-ridged backbone.

"By heaven, at least you're not going to get the Rulls in on anything that happens."

His finger closed hard on that yielding trigger; there was a white blaze of fire that—missed! Amazingly—it missed.

Instants passed before his brain grasped the startling fact that he was flying through the air, flung clear by one incredibly swift jerk of that vast, blue body.

He struck brush. Grasping fingers of sticky jungle vine wrenched at his clothes, ripped his hands and tore at the gun, that precious, all-valuable gun.

His clothes shredded, blood came in red, ugly streaks—everything yielded to that desperate environment but the one, all-important thing. With a bitter, enduring singleness of purpose, he clung to the gun.

He landed on his side, rolled over in a flash—and twisted up his gun, finger once more on the trigger. Three feet from that deadly muzzle, the ezwal drew up with a hideous snarl of its great, square face, jumped thirty feet to one side, and vanished, a streak of amazing blue, behind a thick bole of steel-hard jungle fungi.

Shaky, almost ill, Jamieson sat up and surveyed the extent of his defeat, the limits of his victory.

All around was a curious, treeless jungle. Giant, ugly, yellow fungi towered thirty, fifty, eighty feet against a red-brown-green sky-line of tangled brown vines, green lichens, and bulbous, incredibly long, strong, reddish grass.

The ezwal had raged through other such dense matted wilderness with a solid, irresistible strength. For a man on foot, who dared not waste more than a fraction of the waning power of his gun, it was pathless, a major obstacle to the simplest progress—the last place in the world he would have chosen for a fight against anything. And yet—

In losing his temper he had hit on the only possible method of drawing his gun without giving the ezwal advance warning thoughts. At least, he was not being borne helpless along to a great warship loaded with slimy white Rulls.

Rulls!

With a gasp, Jamieson leaped to his feet. There was a treacherous sagging of the ground under his feet, but instinctively he stepped on to a dead patch of fungi; and the harsh, urgent tones of his voice were loud in his ears, as he said swiftly:

“We’ve got to act fast. The discharge of my gun must have registered on Rull instruments, and they’ll be here in minutes. You’ve got to believe me when I tell you that your scheme of enlisting the Rulls as allies is madness.

"Listen to this: all the ships we sent into their galaxy report that every planet of a hundred they visited was inhabited by—Rulls. Nothing else, no other races. They must have destroyed every other living, intelligent creature.

"Man has forty-eight hundred and seventy-four nonhuman allies. I admit all have civilizations that are similar to man's own; and that's the devil of the type of historyless, build-*ingless*, *ezwal* creature. Ezwals cannot defend themselves against energies and machines. And, frankly, man will not leave Carson's Planet till that important defense question has been satisfactorily mastered.

"You and your revolution. True, the simple people in their agony may flee in mad panic, but the military will remain, a disciplined, undefeatable organization, a hundred battleships, a thousand cruisers, ten thousand destroyers for that one base alone. The *ezwal* plan is clever only in its grasp of human psychology and because it may well succeed in causing destruction and death. But in that plan is no conception of the vastness of interstellar civilization, the responsibilities and the duties of its members.

"The reason I was taking you to Earth was to show you the complexities and honest problems—of that civilization, to prove to you that we are not evil. I swear to you that man and his present grand civilization will solve the *ezwal* problem to *ezwal* satisfaction. What do you say?"

His last words boomed out eerily in the odd, deathly, late-afternoon hush that had settled over the jungle world of Er-istan II. He could see the blur of sun, a misty blob low in the eastern sky; and the hard realization came:

Even if he escaped the Rulls, in two hours at most the great fanged hunters and the reptilian flesh-eaters that haunted the slow nights of this remote, primeval planet would emerge ravenous from their stinking hideaways, and seek their terrible surcease.

He'd have to get away from this damned fungi, find a real tree with good, strong, high-growing branches and, somehow, stay there all night. Some kind of system of intertwining vines, properly rigged up, should warn him of any beast intruder—including *ezwals*.

He began to work forward, clinging carefully to the densest, most concealing brush. After fifty yards, the jungle seemed as impenetrable as ever, and his legs and arms ached from his effort. He stopped, and said:

"I tell you that man would never have gone into Carson's

Planet the way he did, if he had known it was inhabited by intelligent beings. There are strict laws that govern even under military necessity."

Quite abruptly, answer came: "Cease these squalling, lying appeals. Man possesses no less than five thousand planets formerly occupied by intelligent races. No totality of prevarication can cover up or even excuse five thousand cosmic crimes—"

The ezwal's thought broke off; then, almost casually: "Professor, I've just run across an animal that—"

Jamieson was saying: "Man's crimes are as black as his noble works are white and wonderful. You must understand those two facets of his character—"

"This animal," persisted the ezwal, "is floating above me now, watching me, but I am unable to catch a single vibration of its thought—"

"More than three thousand of those races now have self-government. Man does not long deny to any basically good intelligence the liberty and freedom of action which he needs so much himself—"

"*Professor!*" The thought was like a knife piercing, utterly urgent. "This creature has a repellent, worm-shaped body, and it floats without wings. It has no brain that I can detect."

Very carefully, very gently, Jamieson swung himself behind a pile of brush and raised his pistol. Then softly, swiftly, he said: "Act like a beast, snarl at it, and run like hell into the thickets underbrush if it reaches with one of those tiny, wormlike hands toward any one of the half-dozen notches on either side of its body."

"If you cannot contact its mind—we never could get in touch with it in any way—you'll have to depend on its character, as follows: The Rull hears only sounds between five hundred thousand and eight hundred thousand vibrations a second. That is why I can talk out loud without danger. That, also, suggests that its thought moves on a vastly different vibration level; it must hate and fear everything else, which must be why it is so remorselessly impelled on its course of destruction."

"The Rull does not kill for pleasure. It exterminates. It possibly considers the entire Universe alien which, perhaps, is why it eliminates all important creatures on any planet it intends to occupy. There can be no intention of occupying this planet because our great base on Eristan I is only five thousand light-years or twenty-five hours away by warship. There-

fore it will not harm unless it has special suspicions. Therefore be all animal."

He finished tensely: "What's it doing now?"

There was no answer.

The minutes dragged; and it wasn't so much that there was silence. Queer, little noises came out of nearness and remoteness: the distant crack of wood under some heavy foot, faint snortings of creatures that were not exactly near—but too near for comfort.

A memory came that was more terrible than the gathering night, a living flame of remembrance of the one time he had seen a Rull feeding off a human being.

First, the clothes were stripped from the still-living victim, whose nervous system was then paralyzed partially by a stinger that was part of the Rull's body. And then, the big, fat, white worm crawled on to the body, and lay there in that abnormal, obscene embrace while its cup-like mouths fed—

Jamieson recoiled mentally and physically. Abrupt, desperate, panicky fear sent him burrowing deeper into the tangle of brush. It was quiet there, not a breath of air touched him. And he noticed, after a moment, that he was soaked with perspiration.

Other minutes passed; and because, in his years, courage had never been long absent from him, he ventured into the hard, concentrated thought of attempted communication: "If you have any questions, for heaven's sake don't waste time."

There must have been wind above his tight shelter of brush, for a fog heavily tainted with the smell of warm, slimy water drifted over him, blocking even the narrow view that remained.

Jamieson stirred uneasily. It was not fear; his mind was a clenched unit, like a fist ready to strike. It was that—suddenly—he felt without eyes in a world of terrible enemies. More urgently, he went on:

"Your very act of asking my assistance in identifying the Rull implied your recognition of our interdependence. Accordingly, I demand—"

"Very well!" The answering thought was dim and far away. "I admit my inability to get in touch with this worm ends my plans of establishing an anti-human alliance."

There was a time, such a short time ago, Jamieson thought drearily, when such an admission would have brought genuine intellectual joy. The poor devils on Carson's Planet, at

least, were not going to have to fight Rulls as well as their own madness—as well as ezwals.

He braced himself, vaguely amazed at the lowness of his morale. He said almost helpless: "What about us?"

"I have already repaid your initial assistance in that, at this moment, I am leading the creature directly away from you."

"It's still following you?"

"Yes! It seems to be studying me. Have you any suggestions?"

Weariness faded; Jamieson snapped: "Only on condition that you are willing to recognize that we are a unit, and that everything else, including what man and ezwal are going to do about Carson's Planet, must be discussed later. Agreed?"

The ezwal's thought was scarcely more than a snarl: "You keep harping on that!"

Momentarily, the scientist felt all the exasperation, all the strain of the past hours a pressing, hurting force in his brain. Like a flame, it burst forth, a flare of raging thought:

"You damned scoundrel, you've forced every issue so far, and all of them were rooted in that problem. You make that promise—or just forget the whole thing."

The silence was a pregnant emotion, dark with bitter, formless thought. Around Jamieson, the mists were thinning, fading into the twilight of that thick jungle. Finally:

"I promise to help you safely across the Demon Straits; and I'll be with you in minutes—if I don't lose this thing first."

Jamieson retorted grimly: "Agreement satisfactory—but don't expect to lose a Rull. They've got perfect anti-gravity, whereas that anti-gravity raft of ours was simply a super-parachute. It would eventually have fallen under its own weight."

He paused tensely; then: "You've got everything clear? I'll burn the Rull that's following you, then we'll beat it as fast as your legs can carry us."

"Get ready!" The answer was a cold, deadly wave. "I'll be there in seconds."

There was no time for thought. Brush crashed. Through the mist, Jamieson caught one flashing glimpse of the ezwal with its six legs. At fifty feet, its slate-gray, three-in-line eyes were like pools of light. And then, as he pointed his gun in a desperate expectation—

"*For your life!*" came the ezwal's thought. "Don't shoot, don't move. There are a dozen of them above me and—"

Queerly, shatteringly, that strong flow of thought ended in a chaotic jumble as energy flared out there, a glaring, white fire that blinked on, and then instantly off.

The mist rolled thicker, white-gray, noxious stuff that hid what *must* be happening.

And hid him.

Jamieson lay stiff and cold—and waited. For a moment, so normal had mind-reading become in these hours, he forgot he could only catch thoughts at the will of the ezwal, and he strained to penetrate the blackout of mind vibrations.

He thought finally, a tight, personal thought: The Rulls must have worked a psychosis on the ezwal. Nothing else could explain that incoherent termination of thought in so powerful a mind. And yet—protective psychosis was used mainly on animals and other uncivilized and primitive life forms, unaccustomed to that sudden interplay of dazzling lights.

He frowned bleakly. Actually in spite of its potent brain, the ezwal was very much animal, very much uncivilized, and possibly extremely allergic to mechanical hypnosis.

Definitely, it was not death from a heavy mobile projector because there would have been sound from the weapon, and because there *wouldn't* have been that instantaneous distortion of thought, that twisting—

He felt a moment's sense of intense relief. It had been curiously unsettling to think of that mighty animal struck dead.

He caught his mind into a harder band: So the ezwal was captive not corpse. So—what now?

Relief drained. It wasn't, he thought blankly, as if he could do anything against a heavily armored, heavily manned cruiser.

Ten minutes passed; and then out of the deepening twilight came the thunderous roar of a solid bank of energy projectors. There was answering thunder on a smaller scale; and then, once again, though farther away now, the deep, unmistakable roar of a broadside of a hundred-inch battleship projectors.

A battleship! A capital ship from the Eristan I base, either on patrol or investigating energy discharges. The Rulls would be lucky if they got away. As for himself—nothing!

Nothing but the night and its terrors. True, there would be no trouble now from the Rulls, but that was all. This wasn't rescue, not even the hope of rescue. For days and days, the two great ships would maneuver in space; and, by the time

the battleship reported again to its base, there wouldn't be very much thought given to the why of the Rull cruiser's presence on or near the ground.

Besides, the Rull would have detected its enemy before its own position would be accurately plotted. That first broadside had easily been fifty miles away.

The problem of ezwal and man, that had seemed such an intimate, soluble pattern when he and the great animal were alone, was losing its perspective. Against the immeasurably larger background of space, the design was twisting crazily.

It became a shapeless thing, utterly lost in the tangle of unseen obstacles that kept tripping him, as he plunged forward into the dimming reaches of jungle.

In half an hour it was pitch dark and he hadn't penetrated more than a few hundred yards. He would have blundered on into the black night, except that suddenly his fingers touched thick, carboniferous bark.

A tree!

Great beasts stamped below, as he clung to that precarious perch. Eyes of fire glared at him. Seven times in the first hour by his watch monstrous things clambered up the tree, mewing and slaving in feral desire. Seven times his weakening gun flashed a thinner beam of destroying energy, and great, scale-armored carnivores whose approach shook the earth came to feed on the odorous flesh—and passed on.

One hour gone!

A hundred nights like this one, to be spent without sleep, to be defended against a new, ferocious enemy every ten minutes, and no power in his gun.

The terrible thing was that the ezwal had just agreed to work with him against the Rulls. Victory so near, then instantly snatched afar—

Something, a horrible something, slobbered at the foot of the tree. Great claws rasped on bark, and then two eyes, easily a foot apart, started with an astounding speed up toward him.

Jamieson snatched at his gun, hesitated, then began hastily to climb up into the thinner branches. Every second, as he scrambled higher, he had the awful feeling that a branch would break and send him sliding down toward the thing; and there was the more dreadful conviction that great jaws were at his heels.

Actually, however, his determination to save his gun worked beyond his expectations. The beast was edging up

into those thin branches after him when there was a hideous snarl below, and another great creature started up the tree.

The fighting of animal against animal that started then was absolutely continuous. The tree shook, as sabre-toothed beasts that mewed fought vast, grunting, roaring shapes. And every little while there would be a piercing triumphant scream as a gigantic dinosaur-thing raged into the fight—and literally ate the struggling mass of killers.

Toward dawn, the continuous bellowing and snarling from near and far diminished notably, as if stomach after eager stomach gorged itself, and retired in enormous content to some cesspool of a bed.

At dawn he was still alive, completely weary, his body drooping with sleep-desire, and in his mind only the will to live, but utterly no belief that he would survive the day.

If only, on that ship, he had not been cornered so swiftly in the control room by the ezwal, he could have taken anti-sleep pills, fuel capsules for his gun and—he laughed in sharp sardonicism as the futility of that line of reasoning penetrated—and a lifeboat which, of course, would by itself have enabled him to fly to safety.

At least there had been a few hundred food capsules in the control room—a month's supply.

He sucked at one that was chocolate flavored and slowly climbed to the bloodstained ground.

There was a sameness about the day, a mind-wearying sameness! Jungle and sea, different only in the designs of land shape and in the way the water lapped a curving, twisting shore. Always the substance was unchanged.

Jungle and sea.

Everything fought him—and until midafternoon he fought back. He had covered, he estimated, about three miles when he saw a tree—there was a kind of crotch high upon its towering form where he could sleep without falling if he tied himself with vines.

Three miles a day. Twelve hundred miles, counting what he still had to cover of this jungle ocean, counting the Demon Straits—twelve hundred miles at three miles a day.

Four hundred days!

He woke up with the beasts of the Eristan night coughing their lust at the base of his tree. He woke up with the memory of a nightmare in which he was swimming the Demon waters, pursued by millions of worms, who kept

shouting something about the importance of solving the ezwal problem.

"What," they asked accusingly, "is man going to do with civilizations intellectually so advanced, but without a single building or weapon or—anything?"

Jamieson shook himself awake; and then: "To hell with ezwals!" he roared into the black, pressing, deadly night.

For a while, then, he sat shocked at the things that were happening to his mind, once so stable.

Stable! But that, of course, was long ago.

The fourth day dawned, a misty, muggy replica of the day before. And of the day before that. And before that. And—

"Stop it, you idiot!" said Professor Jamieson aloud, savagely.

He was struggling stubbornly toward what seemed a clearing when a gray mass of creepers to one side stirred as in a gentle wind, and started to grow toward him. Simultaneously, a queer, hesitant thought came into his mind from—outside!

"Get them all!" it said with a madly calm ferociousness. "Get this—two-legged thing—too. Send creepers through the ground."

It was such an alien thought-form, so unsettlingly different, that his brain came up from the depths to which it had sunk, and poised with startled alertness, abruptly, almost normally fascinated.

"Why, of course," he thought, quite sanely, "we've always wondered how the Rytt killer plant could have evolved its high intelligence. It's like the ezwal. It communicates by mental telepathy."

Excitement came, an intense, scientific absorption in all the terrifically important knowledge that he had accumulated—about ezwals, about Rulls, and the way he had caught the Rytt plant's private vibrations. Beyond all doubt, the ezwal, in forcing its thoughts on him, had opened paths, and made it easier for him to receive all thoughts. Why, that could mean that he—

In a blaze of alertness, he cut the thought short; his gaze narrowed on the gray creepers edging toward him. He backed away, gun ready; it would be just like the Rytt to feint at him with a slow, open, apparently easily avoidable approach. Then strike like lightning from underground with its potent, needle-sharp root tendrils.

There was not the faintest intention in him to go back, or

evade any crisis this creature might force. Go back where?—To what?

He skirted the visible creepers, broke through a fifty-foot wilderness of giant green ferns; and, because his control of himself was complete now, it was his military mind, the mind that accepted facts as they were, that took in the scene that spread before him.

In the near distance rested a two-hundred-foot Rull lifeboat. Near it, a dozen wanly white Rulls lay stiff and dead, each tangled in its own special bed of gray creepers. The creepers extended on into the open door of the lifeboat; and there was no doubt that it had "got them all"!

The atmosphere of lifelessness that hung over the ship, with all its promise of escape, brought a soaring joy, that was all the sweeter because of the despair of those days of hell—a joy that ended as the cool, hard thought of the ezwal struck into his brain:

"I've been expecting you, professor. The controls of this lifeboat are beyond my abilities to operate; so here I am waiting for you—"

From utter despair to utter joy to utter despair in minutes.

Cold, almost desolate, Jamieson searched for his great and determined enemy. But there was nothing moving in the world of jungle, no glimpse of dark, gleaming blue, nothing but the scatter of dead, white worms and the creeper-grown lifeboat to show that there ever had been movement.

He was only dimly aware of the ezwal's thoughts continuing:

"This killer plant was here four days ago when I landed from the anti-gravity raft. It had moved farther up the island when these Rulls brought me back to this lifeboat. I had already thrown off the effects of the trick-mirror hypnotism they used on me; and so I heard the human battleship and the Rull cruiser start their fight. These things seemed unaware of what was wrong—I suppose because they didn't hear the sounds—and so they laid themselves out on the wet, soggy ground.

"That was when I got into mental communication with the plant, and called it back this way—and so we had an example of the kind of cooperation which you've been stressing for so long with such passionate sincerity, only—"

The funny thing was that, in spite of all he had fought through, hope was finally dead. Every word the ezwal was projecting so matter-of-factly showed that, once again, this

immensely capable being had proved its enormous capacity for taking care of itself.

Cooperation with a Rytts killer plant—the one thing on this primitive world that he had really counted on as a continuous threat to the ezwal.

No more; and if the two worked together against him— He held his gun poised but the black thought went on:

It was obvious that man would never really conquer the ezwal. Point 135 psycho-friction meant there would be a revolution on Carson's Planet, followed by a long, bloody, futile struggle and— He grew aware that the ezwal was sending thoughts again:

“—only one fault with your reasoning. I've had four days to think over the menace of the Rulls, and of how time and again I had to cooperate with you. Had to!

“And don't forget, in the Rytts intelligence, I've had a perfect example of all the worst characteristics of ezwals. It, too, has mental telepathy. It, too, must develop a machine civilization before it can hope to hold its planet. It's in an earlier stage of development, so it's even more stubborn, more stupid—”

Jamieson was frowning in genuine stark puzzlement, scarcely daring to let his hope gather. He said violently: “Don't try to kid me. You've won all along the line. And now, of your own free will, you're offering, in effect, to help me get back to Carson's Planet in time to prevent a revolution favorable to the ezwals. Like hell you are!”

“Not my own free will, professor,” came the laconic thought. “Everything I've done since we came to this planet has been forced on me. You were right in thinking I had been compelled to return for your aid. When I landed from the raft, this creeping thing was spread across the entire peninsula, here, and it wouldn't let me pass, stubbornly refused to listen to reason.

“It's completely ungrateful for the feast of worms I helped it get; and at this moment it has me cornered in a room of this ship.

“Professor, take your gun, and teach this damned creature the importance of—cooperation!”

FOUNDATION

Astounding,

May

by Isaac Asimov (1920-)

(I suppose that of all the fiction I have written The Foundation Trilogy is far and away the most successful. It received a Hugo for the "best all-time novel series in 1966 and it has been selling steadily in both hard and soft covers for thirty years with no signs of any letup.

Yet before the books appeared (1951–1953), it was a series of nine interconnected stories that appeared in Astounding between 1942 and 1950. The first was this one, "Foundation."

Naturally, I had no idea when I wrote the story what the future would hold for it. It began on August 1, 1941, when I presented John Campbell with the idea for a story involving the fall of the Galactic Empire written as a historical novel.

Campbell loved the idea so much that he wouldn't dream of letting me write a single story about it. He insisted on an open-ended series after the fashion of Heinlein's "Future History" series.

Campbell dazzled me into agreeing (I was always being dazzled by him) and on August 11, I began the story. It took me three weeks to write (I only wrote in my spare time for I was working toward my doctorate at Columbia at the time) and, uncertain whether Campbell might not change his mind about letting me do more stories in the series, I deliberately didn't reveal the ending but let it hang. This made it certain that Campbell would either reject the story or demand a sequel.

He demanded a sequel.—I.A.)

Hari Seldon was old and tired. His voice, roared out though it was, by the amplifying system, was old and tired as well.

There were few in that small assemblage that did not realize that Hari Seldon would be dead before the next spring. And they listened in respectful silence to the last official words of the Galaxy's greatest mind.

"This is the final meeting," that tired voice said, "of the group I had called together over twenty years ago." Seldon's eyes swept the seated scientists. He was alone on the platform, alone in the wheelchair to which a stroke had confined him two years before, and on his lap was the last volume—the fifty-second—of the minutes of previous meetings. It was opened to the last page.

He continued: "The group I called together represented the best the Galactic Empire could offer of its philosophers, its psychologists, its historians and its physical scientists. And in the twenty years since, we have considered the greatest problem ever to confront any group of fifty men—perhaps the greatest ever to confront any number of men.

"We have not always agreed on methods or on procedure. We have spent months and, doubtless, years on futile debates over relatively minor issues. On more than one occasion, sizable sections of our group threatened to break away altogether.

"And yet"—his old face lit in a gentle smile—"we solved the problem. Many of the original members died and were replaced by others. Schemes were abandoned; plans voted down; procedures proven faulty.

"Yet we solved the problem; and not one member, while yet alive, left our group. I am glad of that."

He paused, and allowed the subdued applause to die.

"We have done; and our work is over. The Galactic Empire is falling, but its culture shall not die, and provision has been made for a new and greater culture to develop therefrom. The two Scientific Refuges we planned have been established: one at each end of the Galaxy, at Terminus and at Star's End. They are in operation and already moving along the inevitable lines we have drawn for them.

"For us is left only one last item, and that fifty years in the

future. That item, already worked out in detail, will be the instigation of revolts in the key sectors of Anacreon and Loris. It will set that final machinery in motion to work itself out in the millennium that follows."

Hari Seldon's tired head dropped. "Gentlemen, the last meeting of our group is hereby adjourned. We began in secret; we have worked throughout in secret; and now end in secret—to wait for our reward a thousand years hence with the establishment of the Second Galactic Empire."

The last volume of minutes closed, and Hari Seldon's thin hand fell away from it.

"I am finished!" he whispered.

Lewis Pirenne was busily engaged at his desk in the one well-lit corner of the room. Work had to be coordinated. Effort had to be organized. Threads had to be woven into a pattern.

Fifty years now; fifty years to establish themselves and set up Encyclopedia Foundation Number One into a smoothly working unit. Fifty years to gather the raw material. Fifty years to prepare.

It had been done. Five more years would see the publication of the first volume of the most monumental work the Galaxy had ever conceived. And then at ten-year intervals—regularly—like clockwork—volume after volume after volume. And with them there would be supplements; special articles on events of current interest, until—

Pirenne stirred uneasily, as the muted buzzer upon his desk muttered peevishly. He had almost forgotten the appointment. He shoved the door release and out of an abstracted corner of one eye saw the door open and the broad figure of Salvor Hardin enter. Pirenne did not look up.

Hardin smiled to himself. He was in a hurry, but he knew better than to take offense at Pirenne's cavalier treatment of anything or anyone that disturbed him at his work. He buried himself in the chair on the other side of the desk and waited.

Pirenne's stylus made the faintest scraping sound as it raced across paper. Otherwise, neither motion nor sound. And then Hardin withdrew a two-credit coin from his vest pocket. He flipped it and its stainless-steel surface caught glitters of light as it tumbled through the air. He caught it and flipped it again, watching the flashing reflections lazily. Stainless steel made good medium of exchange on a planet where all metal had to be imported.

Pirenne looked up and blinked. "Stop that!" he said querulously.

"Eh?"

"That infernal coin tossing. Stop it!"

"Oh." Hardin pocketed the metal disk. "Tell me when you're ready, will you? I promised to be back at the City Council meeting before the new aqueduct project is put to a vote."

Pirenne sighed and shoved himself away from the desk. "I'm ready. But I hope you aren't going to bother me with city affairs. Take care of that yourself, please. The Encyclopedia takes up all my time."

"Have you heard the news?" questioned Hardin, phlegmatically.

"What news?"

"The news that the Terminus City ultra-wave set received two hours ago. The Royal Governor of the Prefect of Anacreon has assumed the title of king."

"Well? What of it?"

"It means," responded Hardin, "that we're cut off from the inner regions of the Empire. Do you realize that Anacreon stands square across what was our last remaining trade route to Santanni and to Trantor and to Vega itself? Where is our metal to come from? We haven't managed to get a steel or aluminum shipment through in six months and now we won't be able to get any at all, except by grace of the King of Anacreon."

Pirenne *tch-tched* impatiently. "Get them through him, then."

"But can we? Listen, Pirenne, according to the charter which established this Foundation, the Board of Trustees of the Encyclopedia Committee has been given full administrative powers. I, as Mayor of Terminus City, have just enough power to blow my own nose and perhaps to sneeze if you countersign an order giving me permission. It's up to you and your Board then. I'm asking you in the name of the City, whose prosperity depends upon uninterrupted commerce with the Galaxy, to call an emergency meeting—"

"Stop! A campaign speech is out of order. Now, Hardin, the Board of Trustees has not barred the establishment of a municipal government on Terminus. We understand one to be necessary because of the increase in population since the Foundation was established fifty years ago, and because of the increasing number of people involved in non-Ency-

cllopedia affairs. *But* that does not mean that the first and *only* aim of the Foundation is no longer to publish the definitive Encyclopedia of all human knowledge. We are a State-supported, scientific institution, Hardin. We cannot—must not—*will* not interfere in local politics.”

“Local politics! By the Emperor’s left big toe, Pirenne, this is a matter of life and death. The planet, Terminus, by itself cannot support a mechanized civilization. It lacks metals. You know that. It hasn’t a trace of iron, copper, or aluminum in the surface rocks, and precious little of anything else. What do you think will happen to the Encyclopedia if this watchamacallum King of Anacreon clamps down on us?”

“On *us*? Are you forgetting that we are under the direct control of the Emperor himself? We are not part of the Prefect of Anacreon or of any other prefect. Memorize that! We are part of the Emperor’s personal domain and no one touches us. The Empire can protect its own.”

“Then why didn’t it prevent the Royal Governor of Anacreon from kicking over the traces? And only Anacreon? At least twenty of the outermost prefects of the Galaxy, the entire Periphery as a matter of fact, have begun steering things their own way. I tell you I feel darned uncertain of the Empire and its ability to protect us.”

“Hokum! Royal Governors, Kings—what’s the difference? The Empire is always shot through with a certain amount of politics and with different men pulling this way and that. Governors have rebelled, and, for that matter, Emperors have been deposed or assassinated before this. But what has that to do with the Empire itself? Forget it, Hardin. It’s none of our business. We are first of all and last of all—scientists. And our concern is the Encyclopedia. Oh, yes, I’d almost forgotten. Hardin!”

“Well?”

“Do something about that paper of yours!” Pirenne’s voice was angry.

“The Terminus City *Journal*? It isn’t mine; it’s privately owned. What’s it been doing?”

“For weeks now it has been recommending that the fiftieth anniversary of the establishment of the Foundation be made the occasion for public holidays and quite inappropriate celebrations.”

“And why not? The radium clock will open the First Vault

in three months. I would call that a big occasion, wouldn't you?"

"Not for silly pageantry, Hardin. The First Vault and its opening concern the Board of Trustees alone. Anything of importance will be communicated to the people. That is final and please make it plain to the *Journal*."

"I'm sorry, Pirenne, but the City Charter guarantees a certain minor matter known as freedom of the press."

"It may. But the Board of Trustees does not. I am the Emperor's representative on Terminus, Hardin, and have full powers in this respect."

Hardin's expression became that of a man counting to ten, mentally. He said grimly, "In connection with your status as Emperor's representative, then, I have a final piece of news to give you."

"About Anacreon?" Pirenne's lips tightened. He felt annoyed.

"Yes. A special envoy will be sent to us from Anacreon. In two weeks."

"An envoy? Here? From Anacreon?" Pirenne chewed that. "What for?"

"Hardin stood up, and shoved his chair back up against the desk. "I give you one guess."

And he left—quite unceremoniously.

Anselm haut Rodric—"haut" itself signifying noble blood—Sub-prefect of Pluema and Envoy Extraordinary of his Highness of Anacreon—plus half a dozen other titles—was met by Salvor Hardin at the spaceport with all the imposing ritual of a state occasion.

With a tight smile and a low bow, the sub-prefect had flipped his blaster from its holster and presented it to Hardin butt first. Hardin returned the compliment with a blaster specifically borrowed for the occasion. Friendship and good will were thus established, and if Hardin noted the barest bulge at Haut Rodric's shoulder, he prudently said nothing.

The ground car that received them then—preceded, flanked and followed by the suitable cloud of minor functionaries—proceeded in a slow, ceremonious manner to Cy-clopedia Square, cheered on its way by a properly enthusiastic crowd.

Sub-prefect Anselm received the cheers with the complaisant indifference of a soldier and nobleman.

He said to Hardin, "And this city is all your world?"

Hardin raised his voice to be heard above the clamor. "We are a young world, your eminence. In our short history we have had but few members of the higher nobility visiting our poor planet. Hence, our enthusiasm."

It is certain that "higher nobility" did not recognize irony when he heard it.

He said thoughtfully, "Founded fifty years ago. Hm-m-m! You have a great deal of unexploited land here, mayor. You have never considered dividing it into estates?"

"There is no necessity as yet. We're extremely centralized; we have to be, because of the Encyclopedia. Some day, perhaps, when our population has grown—"

"A strange world! You have no peasantry?"

Hardin reflected that it didn't require a great deal of acumen to tell that his eminence was indulging in a bit of fairly clumsy pumping. He replied casually, "No—nor nobility."

Haut Rodric's eyebrows lifted. "And your leader—the man I am to meet?"

"You mean Dr Pirenne? Yes! He is the Chairman of the Board of Trustees—and a personal representative of the Emperor."

"*Doctor?* No other title? *A scholar?* and he rates above the civil authority?"

"Why, certainly," replied Hardin amiably. "We're all scholars more or less. After all, we're not so much a world as a scientific foundation—under the direct control of the Emperor."

There was a faint emphasis upon the last phrase that seemed to disconcert the sub-prefect. He remained thoughtfully silent during the rest of the slow way to Cyclopedica Square.

If Hardin found himself bored by the afternoon and evening that followed, he had at least the satisfaction of realizing that Pirenne and Haut Rodric—having met with loud and mutual protestations of esteem and regard—were detesting each other's company a good deal more.

Haut Rodric had attended with glazed eye to Pirenne's lecture during the "inspection tour" of the Encyclopedia Building. With polite and vacant smile, he had listened to the latter's rapid patter as they passed through the vast storehouses of reference films and the numerous projection rooms.

It was only after he had gone down level by level into and

through the composing departments, editing departments, publishing departments, and filming departments that he made his first comprehensive statement.

"This is all very interesting," he said, "but it seems a strange occupation for grown men. What good is it?"

It was a remark, Hardin noted, for which Pirenne found no answer, though the expression of his face was most eloquent.

The dinner that evening was much the mirror image of the events of that afternoon, for Haut Rodric monopolized the conversation by describing—in minute technical detail and with incredible zest—his own exploits as battalion head during the recent war between Anacreon and the neighboring newly proclaimed Kingdom of Smyrno.

The details of the sub-prefect's account were not completed until dinner was over and one by one the minor officials had drifted away. The last bit of triumphant description of mangled spaceships came when he had accompanied Pirenne and Hardin onto the balcony and relaxed in the warm air of the summer evening.

"And now," he said, with a heavy joviality, "to serious matters."

"By all means," murmured Hardin, lighting a long cigar of Vegan tobacco—not many left, he reflected—and teetering his chair back on two legs.

The Galaxy was high in the sky and its misty lens shape stretched lazily from horizon to horizon. The few stars here at the very edge of the universe were insignificant twinkles in comparison.

"Of course," said the sub-prefect, "all the formal discussions—the paper signing and such dull technicalities, that is—will take place before the—what is it you call your council?"

"The Board of Trustees," replied Pirenne coldly.

"Queer name! Anyway, that's for tomorrow. We might as well clear away some of the underbrush, man to man, right now, though. Hey?"

"And this means—" prodded Hardin.

"Just this. There's been a certain change in the situation out here in the Periphery and the status of your planet has become a trifle uncertain. It would be very convenient if we succeeded in coming to an understanding as to how the matter stands. By the way, mayor, have you another one of those cigars?"

Hardin started and produced one reluctantly.

Anselm haut Rodric sniffed at it and emitted a clucking sound of pleasure. "Vegan tobacco! Where did you get it?"

"We received some last shipment. There's hardly any left. Space knows when we'll get more—if ever."

Pirenne scowled. He didn't smoke—and, for that matter, detested the odor. "Let me understand this, your eminence. Your mission is merely one of clarification?"

Haut Rodric nodded through the smoke of his first lusty puffs.

"In that case, it is soon over. The situation with respect to Encyclopedia Foundation Number One is what it always has been."

"Ah! And what is it that it always has been?"

"Just this: A State-supported scientific institution and part of the personal domain of his august majesty, the Emperor."

The sub-prefect seemed unimpressed. He blew smoke rings. "That's a nice theory, Dr Pirenne. I imagine you've got charters with the Imperial Seal upon it—but what's the actual situation? How do you stand with respect to Smyrno? You're not fifty parsecs from Smyrno's capital, you know. And what about Konom and Daribow?"

Pirenne said: "We have nothing to do with any prefect. As part of the Emperor's—"

"They're not prefects," reminded Haut Rodric, "they're kingdoms now."

"Kingdoms then. We have nothing to do with them. As a scientific institution—"

"Science be dashed!" swore the other, via a bouncing soldiery oath that ionized the atmosphere. "What the devil has that got to do with the fact that we're liable to see Terminus taken over by Smyrno at any time?"

"And the Emperor? He would just sit by?"

Haut Rodric calmed down and said: "Well, now, Dr Pirenne, you respect the Emperor's property and so does Anacreon, but Smyrno might not. Remember, we've just signed a treaty with the Emperor—I'll present a copy to that Board of yours tomorrow—which places upon us the responsibility of maintaining order within the borders of the Old Prefect of Anacreon on behalf of the Emperor. Our duty is clear, then, isn't it?"

"Certainly. But Terminus is not part of the Prefect of Anacreon."

"And Smyrno—"

"Nor is it part of the Prefect of Smyrno. It's not part of any prefect."

"Does Smyrno know that?"

"I don't care what it knows."

"We do. We've just finished a war with her and she still holds two stellar systems that are ours. Terminus occupies an extremely strategic spot, between the two nations."

Hardin felt weary. He broke in: "What is your proposition, your eminence?"

The sub-prefect seemed quite ready to stop fencing in favor of more direct statements. He said briskly, "It seems perfectly obvious that, since Terminus cannot defend itself, Anacreon must take over the job for its own sake. You understand we have no desire to interfere with internal administration—"

"Uh-huh," grunted Hardin dryly.

"—but we believe that it would be best for all concerned to have Anacreon establish a military base upon the planet."

"And that is all you would want—a military base in some of the vast unoccupied territory—and let it go at that."

"Well, of course, there would be the matter of supporting the protecting forces."

Hardin's chair came down on all fours, and his elbows went forward on his knees. "Now we're getting to the nub. Let's put it into language. Terminus is to be a protectorate and to pay tribute."

"Not tribute. Taxes. We're protecting you. You pay for it."

Pirenne banged his hand on the chair with sudden violence. "Let me speak, Hardin. Your eminence, I don't care a rusty half-credit coin for Anacreon, Smyrno, or all your local politics and petty wars. I tell you this is a State-supported tax-free institution."

"State-supported? But we are the State, Dr Pirenne, and we're not supporting."

Pirenne rose angrily. "Your eminence, I am the direct representative of—"

"—his august majesty, the Emperor," chorused Anselm haut Rodric sourly. "And I am the direct representative of the King of Anacreon. Anacreon is a lot nearer, Dr Pirenne."

"Let's get back to business," urged Hardin. "How would you take these so-called taxes, your eminence? Would you take them in kind: wheat, potatoes, vegetables, cattle?"

The sub-prefect stared. "What the devil? What do we need

with those? We've got hefty surpluses. Gold, of course. Chromium or vanadium would be even better, incidentally, if you have it in quantity."

Hardin laughed. "Quantity! We haven't even got iron in quantity. Gold! Here, take a look at our currency." He tossed a coin to the envoy.

Haut Rodric bounced it and stared. "What is it? Steel?"

"That's right."

"I don't understand."

"Terminus is a planet practically without metals. We import it all. Consequently, we have no gold, and nothing to pay unless you want a few thousand bushels of potatoes."

"Well—manufactured goods."

"Without metal? What do we make our machines out of?"

There was a pause and Pirenne tried again. "This whole discussion is wide of the point. Terminus is not a planet, but a scientific foundation preparing a great encyclopedia. Space, man, have you no respect for science?"

"Encyclopedias don't win wars." Haut Rodric's brows furrowed. "A completely unproductive world, then—and practically unoccupied at that. Well, you might pay with land."

"What do you mean?" asked Pirenne.

"This world is just about empty and the unoccupied land is probably fertile. There are many of the nobility on Anacreon that would like an addition to their estates."

"You can't propose any such—"

"There's no necessity of looking so alarmed, Dr Pirenne. There's plenty for all of us. If it comes to what it comes, and you cooperate, we could probably arrange it so that you lose nothing. Titles can be conferred and estates granted. You understand me, I think."

Pirenne sneered. "Thanks!"

And then Hardin said ingenuously: "Could Anacreon supply us with adequate quantities of praseodymium for our atomic-power plant? We've only a few years' supply left."

There was a gasp from Pirenne and then a dead silence for minutes. When Haut Rodric spoke it was in a voice quite different from what it had been till then:

"You have atomic power?"

"Certainly. What's unusual in that? I imagine atomic power is fifty thousand years old now. Why shouldn't we have it? Except that it's a little difficult to get praseodymium."

"Yes . . . yes." The envoy paused and added uncomfort-

ably: "Well, gentlemen, we'll pursue the subject tomorrow. You'll excuse me—"

Pirenne looked after him and gritted through his teeth: "That insufferable, dull-witted donkey! That—"

Hardin broke in: "Not at all. He's merely the product of his environment. He doesn't understand much except that 'I got a gun and you ain't.'"

Pirenne whirled on him in exasperation. "What in space did you mean by the talk about military bases and tribute? Are you crazy?"

"No. I merely gave him rope and let him talk. You'll notice that he managed to stumble out with Anacreon's real intentions—that is, the parceling up of Terminus into landed estates. Of course, I don't intend to let that happen."

"*You* don't intend. *You* don't. And who are you? And may I ask what you meant by blowing off your mouth about our atomic-power plant? Why, it's just the thing that would make us a military target."

"Yes," grinned Hardin. "A military target to stay away from. Isn't it obvious why I brought the subject up? It happened to confirm a very strong suspicion I had had."

"And that was what?"

"That Anacreon no longer has an atomic-power company—and that, therefore, the rest of the Periphery no longer has one as well. Interesting, wouldn't you say?"

"Bah!" Pirenne left in fiendish humor, and Hardin smiled gently.

He threw his cigar away and looked up at the outstretched Galaxy. "Back to oil and coal, are they?" he murmured—and what the rest of his thoughts were he kept to himself.

When Hardin denied owning the *Journal*, he was perhaps technically correct, but no more. Hardin had been the leading spirit in the drive to incorporate Terminus into an autonomous municipality—he had been elected its first mayor—so it was not surprising that, though not a single share of *Journal* stock was in his name, some sixty percent was controlled by him in more devious fashions.

There were ways.

Consequently, when Hardin began suggesting to Pirenne that he be allowed to attend meetings of the Board of Trustees, it was not quite coincidence that the *Journal* began a similar campaign. And the first mass meeting in the history

of the Foundation was held, demanding representation of the City in the "national" government.

And, eventually, Pirenne capitulated with ill grace.

Hardin, as he sat at the foot of the table, speculated idly as to just what it was that made physical scientists such poor administrators. It might be merely that they were too used to inflexible fact and far too unused to pliable people.

In any case, there was Tomaz Sutt and Jord Fara on his left; Lundin Crast and Yate Fulham on his right; with Pirenne, himself, presiding. He knew them all, of course, but they seemed to have put on an extra-special bit of pomposity for the occasion.

Hardin half dozed through the initial formalities and then perked up when Pirenne sipped at the glass of water before him by way of preparation and said:

"I find it very gratifying to be able to inform the Board that, since our last meeting, I have received word that Lord Dorwin, Chancellor of the Empire, will arrive at Terminus in two weeks. It may be taken for granted that our relations with Anacreon will be smoothed out to our complete satisfaction as soon as the Emperor is informed of the situation."

He smiled and addressed Hardin across the length of the table. "Information to this effect has been given to the *Journal*."

Hardin snickered below his breath. It seemed evident that Pirenne's desire to strut this information before him had been one reason for his admission into the sacro-sanctum.

He said evenly, "Leaving vague expressions out of account, what do you expect Lord Dorwin to do?"

Tomaz Sutt replied. He had a bad habit of addressing one in the third person when in his more stately moods.

"It is quite evident," he observed, "that Mayor Hardin is a professional cynic. He can scarcely fail to realize that the Emperor would be most unlikely to allow his personal rights to be infringed."

"Why? What would he do in case they were?"

There was an annoyed stir. Pirenne said, "You are out of order," and, as an after-thought, "and are making what are near-treasonable statements, besides."

"Am I to consider myself answered?"

"Yes! If you have nothing further to say—"

"Don't jump to conclusions. I'd like to ask a question. Besides this stroke of diplomacy—which may or may not

prove to mean anything—has anything concrete been done to meet the Anacreonic menace?"

Yate Fulham drew one hand along his ferocious red moustache. "You see a menace there, do you?"

"Don't you?"

"Scarcely"—this with indulgence. "The Emperor—"

"Great Space!" Hardin felt annoyed. "What is this? Every once in a while someone mentions 'Emperor' or 'Empire' as if it were a magic word. The Emperor is fifty thousand parsecs away, and I doubt whether he gives a damn about us. And if he does, what can he do? What there was of the imperial navy in these regions is in the hands of the four kingdoms now and Anacreon has its share. Listen, we have to fight with guns, not with words.

"Now, get this. We've had two months of grace so far, mainly because we've given Anacreon the idea that we've got atomic weapons. Well, we all know that that's a little white lie. We've got atomic power, but only for commercial uses, and darn little at that. They're going to find that out soon, and if you think they're going to enjoy being jollied along, you're mistaken."

"My dear sir—"

"Hold on; I'm not finished." Hardin was warming up. He liked this. "It's all very well to drag chancellors into this, but it would be much nicer to drag a few great big siege guns fitted for beautiful atomic bombs into it. We've lost two months, gentlemen, and we may not have another two months to lose. What do you propose to do?"

Said Lundin Crast, his long nose wrinkling angrily, "If you're proposing the militarization of the Foundation, I won't hear a word of it. It would mark our open entrance into the field of politics. We, Mr Mayor, are a scientific foundation and nothing else."

Added Sutt, "He does not realize, moreover, that building armaments would mean withdrawing men—valuable men—from the Encyclopedia. That cannot be done, come what may."

"Very true," agreed Pirenne. "The Encyclopedia first—always."

Hardin groaned in spirit. The Board seemed to suffer violently from Encyclopedia on the brain.

He said icily, "Has it ever occurred to the Board that it is

barely possible that Terminus may have interests other than the Encyclopedia?"

Pirenne replied, "I do not conceive, Hardin, that the Foundation can have any interest other than the Encyclopedia."

"I didn't say the Foundation; I said *Terminus*. I'm afraid you don't understand the situation. There's a good million of us here on Terminus, and not more than a hundred and fifty thousand are working directly on the Encyclopedia. To the rest of us, this is *home*. We were born here. We're living here. Compared with our farms and our homes and our factories, the Encyclopedia means little to us. We want them, protected—"

He was shouted down.

"The Encyclopedia first," ground out Crast. "We have a mission to fulfill."

"Mission, hell," shouted Hardin. "That might have been true fifty years ago. But this is a new generation."

"That has nothing to do with it," replied Pirenne. "We are scientists."

And Hardin leaped through the opening. "Are you, though? That's a nice hallucination, isn't it? Your bunch here is a perfect example of what's been wrong with the entire Galaxy for thousands of years. What kind of science is it to be stuck out here for centuries classifying the work of scientists of the last millennium? Have you ever thought of working onward, *extending* their knowledge and improving upon it? No! You're quite happy to stagnate. The whole Galaxy is, and has been for space knows how long. That's why the Periphery is revolting; that's why communications are breaking down; that's why petty wars are becoming eternal; that's why whole systems are losing atomic power and going back to barbarous techniques of a chemical power.

"If you ask me," he cried, "*the Galaxy is going to pot!*"

He paused and dropped into his chair to catch his breath, paying no attention to the two or three that were attempting simultaneously to answer him.

Crast got the floor. "I don't know what you're trying to gain by your hysterical statements, Mr Mayor. Certainly, you are adding nothing constructive to the discussion. I move, Mr Chairman, that the last speaker's remarks be placed out of order and the discussion be resumed from the point where it was interrupted."

Jord Fara bestirred himself for the first time. Up to this point Fara had taken no part in the argument even at its hottest. But now his ponderous voice, every bit as ponderous as his three-hundred-pound body, burst its bass way out.

"Haven't we forgotten something, gentlemen?"

"What?" asked Pirenne, peevishly.

"That in a month we celebrate our fiftieth anniversary." Fara had a trick of uttering the most obvious platitudes with great profundity.

"What of it?"

"And on that anniversary," continued Fara, placidly, "Hari Seldon's First Vault will open. Have you ever considered what might be in the First Vault?"

"I don't know. Routine matters. A stock speech of congratulations, perhaps. I don't think any significance need be placed on the First Vault—though the *Journal*"—and he glanced at Hardin, who grinned back—"did try to make an issue of it. I put a stop to that."

"Ah," said Fara, "but perhaps you are wrong. Doesn't it strike you"—he paused and put a finger to his round little nose—"that the Vault is opening at a very convenient time?"

"Very *inconvenient* time, you mean," muttered Fulham. "We've got some other things to worry about."

"Other things are more important than a message from Hari Seldon? I think not." Fara was growing more pontifical than ever, and Hardin eyed him thoughtfully. What was he getting at?

"In fact," said Fara happily, "you all seem to forget that Seldon was the greatest psychologist of our time and that he was the founder of our Foundation. It seems reasonable to assume that he used his science to determine the probable course of the history of the immediate future. If he did, as seems likely, I repeat, he would certainly have managed to find a way to warn us of danger and, perhaps, to point out a solution. The Encyclopedia was very dear to his heart, you know."

An aura of puzzled doubt prevailed. Pirenne hemmed. "Well, now, I don't know. Psychology is a great science, but—there are no psychologists among us at the moment, I believe. It seems to me we're on uncertain ground."

Fara turned to Hardin. "Didn't you study psychology under Alurin?"

Hardin answered, half in reverie, "Yes. I never completed my studies, though. I got tired of theory. I wanted to be a

psychological engineer, but we lacked the facilities, so I did the next best thing—I went into politics. It's practically the same thing."

"Well, what do you think of the First Vault?"

And Hardin replied cautiously, "I don't know."

He did not say a word for the remainder of the meeting—even though it got back to the subject of the Chancellor of the Empire.

In fact, he didn't even listen. He'd been put on a new track and things were falling into place—just a little. Little angles were fitting together—one or two.

And psychology was the key. He was sure of that.

He was trying desperately to remember the psychological theory he had once learned—and from it he got one thing right at the start.

A great psychologist such as Seldon could unravel human emotions and human reactions sufficiently to be able to predict broadly the historical sweep of the future.

And that meant—hm-m-m!

Lord Dorwin took snuff. He also had long hair, curled intricately and, quite obviously, artificially; to which were added a pair of fluffy, blond sideburns, which he fondled affectionately. Then, too, he spoke in over-precise statements and left out all the *r*'s.

At the moment, Hardin had no time to think of more of the reasons for the instant detestation in which he had held the noble chancellor. Oh, yes, the elegant gestures of one hand with which he accompanied his remarks and the studied condescension with which he accompanied even a simple affirmative.

But, at any rate, the problem now was to locate him. He had disappeared with Pirenne half an hour before—passed clean out of sight, blast him.

Hardin was quite sure that his own absence during the preliminary discussions would quite suit Pirenne.

But Pirenne had been seen in this wing and on this floor. It was simply a matter of trying every door. Halfway down, he said, "Ah!" and stepped into the darkened room. The profile of Lord Dorwin's intricate hairdo was unmistakable against the lighted screen.

Lord Dorwin looked up and said, "Ah, Hahdin. You ah looking foah us, no doubt?" He held out his snuffbox—over-adorned and poor workmanship at that, noted Hardin—and

was politely refused, whereat he helped himself to a pinch and smiled graciously.

Pirenne scowled and Hardin met that with an expression of blank indifference.

The only sound to break the short silence that followed was the clicking of the lid of Lord Dorwin's snuffbox. And then he put it away and said:

"A gweat achievement, this Encyclopedia of yoahs, Hahdin. A feat, indeed, to rank with the most majestic accomplishments of all time."

"Most of us think so, milord. It's an accomplishment not quite accomplished as yet, however."

"Fwom the little I have seen of the efficiency of yoah Foundation, I have no feahs on that scoah." And he nodded to Pirenne, who responded with a delighted bow.

Quite a love feast, thought Hardin. "I wasn't complaining about the lack of efficiency, milord, as much as of the definite excess of efficiency on the part of the Anacreonians—though in another and more destructive direction."

"Ah, yes, Anacweon." A negligent wave of the hand. "I have just come from theah. Most bahbawous planet. It is thowoughly inconceivable that human beings could live heah in the Pewiphewy. The lack of the most elementawy wequiahments of a cultuahed gentleman; the absence of the most fundamental necessities foah comfoht and convenience—the uttah disuetude into which they—"

Hardin interrupted dryly: "The Anacreonians, unfortunately, have all the elementary requirements for warfare and all the fundamental necessities for destruction."

"Quite, quite." Lord Dorwin seemed annoyed, perhaps at being stopped midway in his sentence. "But we ahn't to discuss business now, y'know. Weally, I'm othah-wise concehnued. Doctah Piwenne, ahn't you going to show me the second volume? Do, please."

The lights clicked out and for the next half-hour Hardin might as well have been on Anacreon for all the attention they paid him. The book upon the screen made little sense to him, nor did he trouble to make the attempt to follow, but Lord Dorwin became quite humanly excited at times. Hardin noticed that during these moments of excitement the chancellor pronounced his r's.

When the lights went on again, Lord Dorwin said,

"Mahvelous. Twuly mahvelous. You ah not, by chance, intewested in ahchaeology, ah you, Hahdin?"

"Eh?" Hardin shook himself out of an abstracted reverie. "No, milord, can't say I am. I'm a psychologist by original intention and a politician by final decision."

"Ah! No doubt intewesting studies. I, myself, y'know—he helped himself to a giant pinch of snuff—"dabble in ahchaeology."

"Indeed?"

"His lordship," interrupted Pirenne, "is most thoroughly acquainted with the field."

"Well, p'haps I am, p'haps I am," said his lordship complacently. "I *have* done an awful amount of wuhk in the science. Extwemely well-read, in fact. I've gone thwough all of Jawdun, Obijasi, Kwomwill . . . oh, all of them, y'know."

"I've heard of them, of course," said Hardin, "but I've never read them."

"You should some day, my deah fellow. It would amply repay you. Why, I cetainly considah it well wuhth the twip heah to the Pewiphewy to see this copy of Lameth. Would you believe it, my libwawy totally lacks a copy. By the way, Doctah Piwenne, you have not fohgotten yoah pwomise to twansdevelop a copy foah me befoah I leave?"

"Only too pleased."

"Lameth, you must know," continued the chancellor, pontifically, "pwesents a new and most intewesting addition to my pwevious knowledge of the 'Owigin Question.'"

"Which question?" asked Hardin.

"The 'Owigin Question.' The place of the owigin of the human species, y'know. Shahly you must know that it is thought that owiginally the human wace occupied only one planetawy system."

"Well, yes, I know that."

"Of course, no one knows exactly which system it is—lost in the mists of antiquity. Theah ah theawies, howevah. Siwius, some say. Othahs insist on Alpha Centauwi, oah on Sol, oah on 61 Cygni—all in the Siwius sectah, you see."

"And what does Lameth say?"

"Well, he goes off along a new twail completely. He twies to show the ahchaeological wemains on the thuhd planet of the Ahctuwian System show that humanity existed theah befoah theah wah any indications of space-twavel."

"And that means it was humanity's birth planet?"

"P'haps. I must wead it closely and weigh the evidence be-

foah I can say foah cuhtain. One must see just how weliable his obsuhvations ah."

Hardin remained silent for a short while. Then he said, "When did Lameth write this book?"

"Oh—I should say about eight hundwed yeahs ago. Of cohse, he has based it lahgly on the pwevious wuhk of Gleen."

"Then why rely on him? Why not go to Arcturus and study the remains for yourself?"

Lord Dorwin raised his eyebrows and took a pinch of snuff hurriedly. "Why, whatevah foah, my deah fellow."

"To get the information firsthand, of course."

"But wheah's the necessity? It seems an uncommonly woundabout and hopelessly wigmawolish method of getting anywheahs. Look heah, now, I've got the wuhks of all the old mastahs—the gweat ahchaeologists of the past. I weigh them against each othah—balance the disagweements—analyze the conflicting statements—decide which is pwobably cowwect—and come to a conclusion. That is the scientific method. At least"—patronizingly—"as I see it. How insuffewably cwude it would be to go to Ahctuwas, oah to Sol, foah instance, and blundah about, when the old mastahs have covahed the gwound so much moah effectually than we could possibly hope to do."

Hardin murmured politely, "I see."

Scientific method, hell! No wonder the Galaxy was going to pot.

"Come, milord," said Pirenne, "I think we had better be returning."

"Ah, yes. P'haps we had."

As they left the room, Hardin said suddenly, "Milord, may I ask a question?"

Lord Dorwin smiled blandly and emphasized his answer with a gracious flutter of the hand. "Cehtainly, my deah fellow. Only too happy to be of service. If I can help you in any way fwom my pooah stoah of knowledge—"

"It isn't exactly about archaeology, milord."

"No?"

"No. It's this: Last year we received news here in Terminus about the explosion of a power plant on Planet V of Gamma Andromeda. We got the barest outline of the accident—no details at all. I wonder if you could tell me exactly what happened."

Pirenne's mouth twisted. "I wonder you annoy his lordship with questions on totally irrelevant subjects."

"Not at all, Doctah Piwenne," interceded the chancellor. "It is quite all wight. Theah isn't much to say concehning it in any case. The powah plant did explode and it was quite a catastwophe, y'know. I believe seweval million people wah killed and at least half the planet was simply laid in wuins. Weally, the govuhment is sewiously considewing placing seweah westwictions upon the indiscwiminate use of atomic powah—though that is not a thing for genewal publication, y'know."

"I understand," said Hardin. "But what was wrong with the plant?"

"Well, weally," replied Lord Dorwin indifferently, "who knows? It had bwoke down some yeahs pweviously and it is thought that the weplacements and wepaiah wuhk was most infewiah. It is so difficult these days to find men who weally undahstand the moah technical details of ouah powah systems." And he took a sorrowful pinch of snuff.

"You realize," said Hardin, "that the independent kingdoms of the Periphery have lost atomic power altogether?"

"Have they? I'm not at all suhpwised. Barbawous planets—Oh, but my deah fellow, don't call them independent. They ahn't, y'know. The tweaties we've made with them ah pwoof of that. They acknowledge the soveweignty of the Empewah. They'd have to, of cohse, oah we wouldn't tweat with them."

"That may be so, but they have considerable freedom of action."

"Yes, I suppose so. Considewable. But that scahcely mat-tahs. The Empiah is fah bettah off, with the Piwiphewy thwown upon its own wesoahces—as it is, moah oah less. They ahn't any good to us, y'know. Most bahbawous planets. Scahcely civilized."

"They were civilized in the past. Anacreon was one of the richest of the outlying provinces. I understand it compared favorably with Vega itself."

"Oh, but, Hahdin, that was centuwies ago. You can scahcely dwaw conclusion fwom that. Things wah diffewent in the old gweat days. We ahn't the men we used to be, y'know. But, Hahdin, come, you ah a most puhsistent chap, I've told you I simply won't discuss business today. Doctah Piwenne did pwepayah me foah you. He told me you would

twy to badgah me, but I'm fah too old a hand foah that. Leave it foah next day."

And that was that.

This was the second meeting of the Board that Hardin had attended, if one were to exclude the informal talks the Board members had had with the now-departed Lord Dorwin. Yet the mayor had a perfectly definite idea that at least one other, and possibly two or three, had been held, to which he had somehow never received an invitation.

Nor, it seemed to him, would he have received notification of this one had it not been for the ultimatum.

At least, it amounted to an ultimatum, though a superficial reading of the visigraphed document would lead one to suppose that it was a friendly interchange of greetings between two potentates.

Hardin fingered it gingerly. It started off floridly with a salutation from "His Puissant Majesty, the King of Anacreon, to his friend and brother, Dr. Lewis Pirenne, Chairman of the Board of Trustees, of the Encyclopedia Foundation Number One," and it ended even more lavishly with a gigantic, multicolored seal of the most involved symbolism.

But it was an ultimatum just the same.

Hardin said, "It turned out that we didn't have much time after all—only three months. But little as it was, we threw it away unused. This thing here gives us a week. What do we do now?"

Pirenne frowned worriedly. "There must be a loophole. It is absolutely unbelievable that they would push matters to extremities in the face of what Lord Dorwin has assured us regarding the attitude of the Emperor and the Empire."

Hardin perked up. "I see. You have informed the King of Anacreon of this alleged attitude?"

"I did—after having placed the proposal to the Board for a vote and having received unanimous consent."

"And when did this vote take place?"

Pirenne climbed onto his dignity. "I do not believe I am answerable to you in any way, Mayor Hardin."

"All right. I'm not that vitally interested. It's just my opinion that it was your diplomatic transmission of Lord Dorwin's valuable contribution to the situation"—he lifted the corner of his mouth in a sour half-smile—"that was the direct cause of this friendly little note. They might have delayed longer otherwise—though I don't think the additional time

would have helped Terminus any, considering the attitude of the Board."

Said Yate Fulham: "And just how do you arrive at that remarkable conclusion, Mr Mayor?"

"In a rather simple way. It merely required the use of that much-neglected commodity—common sense. You see, there is a branch of human knowledge known as symbolic logic, which can be used to prune away all sorts of clogging deadwood that clutters up human language."

"What about it?" said Fulham.

"I applied it. Among other things, I applied it to this document here. I didn't really need to for myself because I knew what it was all about, but I think I can explain it more easily to five physical scientists by symbols rather than by words."

Hardin removed a few sheets of paper from the pad under his arm and spread them out. "I didn't do this myself, by the way," he said. "Muller Holk of the Division of Logic has his name signed to the analyses, as you can see."

Pirenne leaned over the table to get a better view and Hardin continued: "The message from Anacreon was a simple problem, naturally, for the men who wrote it were men of action rather than men of words. It boils down easily and straightforwardly to the unqualified statement, which in symbols is what you see, and which in words, roughly translated, is, 'You give us what we want in a week, or we beat the hell out of you and take it anyway.'"

There was silence as the five members of the Board ran down the line of symbols, and then Pirenne sat down and coughed uneasily.

Hardin said, "No loophole, is there, Dr Pirenne?"

"Doesn't seem to be."

"All right." Hardin replaced the sheets. "Before you now you see a copy of the treaty between the Empire and Anacreon—a treaty, incidentally, which is signed on the Emperor's behalf by the same Lord Dorwin who was here last week—and with it a symbolic analysis."

The treaty ran through five pages of fine print and the analysis was scrawled out in just under half a page.

"As you see, gentlemen, something like ninety percent of the treaty boiled right out of the analysis as being meaningless, and what we end up with can be described in the following interesting manner:

"Obligations of Anacreon to the Empire: *None!*"

"Powers of the Empire over Anacreon: *None!*"

Again the five followed the reasoning anxiously, checking carefully back to the treaty, and when they were finished, Pirenne said in a worried fashion, "That seems to be correct."

"You admit, then, that the treaty is nothing but a declaration of total independence on the part of Anacreon and a recognition of that status by the Empire?"

"It seems so."

"And do you suppose that Anacreon doesn't realize that, and is not anxious to emphasize the position of independence—so that it would naturally tend to resent any appearance of threats from the Empire? Particularly when it is evident that the Empire is powerless to fulfill any such threats, or it would never have allowed independence."

"But then," interposed Sutt, "how would Mayor Hardin account for Lord Dorwin's assurances of Empire support? They seemed—" He shrugged. "Well, they seemed satisfactory."

Hardin threw himself back in the chair. "You know, that's the most interesting part of the whole business. I'll admit I had thought his lordship a most consummate donkey when I first met him—but it turned out that he was actually an accomplished diplomat and a most clever man. I took the liberty of recording all his statements."

There was a flurry, and Pirenne opened his mouth in horror.

"What of it?" demanded Hardin. "I realize it was a gross breach of hospitality and a thing no so-called gentleman would do. Also, that if his lordship had caught on, things might have been unpleasant; but he didn't, and I have the record, and that's that. I took that record, had it copied out and sent that to Holk for analysis, also."

Lundin Crast said, "And where is the analysis?"

"That," replied Hardin, "is the interesting thing. The analysis was the most difficult of the three by all odds. When Holk, after two days of steady work, succeeded in eliminating meaningless statements, vague gibberish, useless qualifications—in short, all the goo and dribble—he found he had nothing left. Everything cancelled out.

"Lord Dorwin, gentlemen, in five days of discussion *didn't say one damned thing*, and said it so you never noticed. *There* are the assurances you had from your precious Empire."

Hardin might have placed an actively working stench bomb upon the table and created no more confusion than existed after his last statement. He waited, with weary patience, for it to die down.

"So," he concluded, "when you sent threats—and that's what they were—concerning Empire action to Anacreon, you merely irritated a monarch who knew better. Naturally, his ego would demand immediate action, and the ultimatum is the result—which brings me to my original statement. We have one week left and what do we do now?"

"It seems," said Sutt, "that we have no choice but to allow Anacreon to establish military bases on Terminus."

"I agree with you there," replied Hardin, "but what do we do toward kicking them off again at the first opportunity?"

Yate Fulham's mustache twitched. "That sounds as if you have made up your mind that violence must be used against them."

"Violence," came the retort, "is the last refuge of the incompetent. But I certainly don't intend to lay down the welcome mat and brush off the best furniture for their use."

"I still don't like the way you put that," insisted Fulham. "It is a dangerous attitude; the more dangerous because we have noticed lately that a sizable section of the populace seems to respond to all your suggestions just so. I might as well tell you, Mayor Hardin, that the Board is not quite blind to your recent activities."

He paused and there was general agreement. Hardin shrugged.

Fulham went on: "If you were to inflame the City into an act of violence, you would achieve elaborate suicide—and we don't intend to allow that. Our policy has but one cardinal principle, and that is the Encyclopedia. Whatever we decide to do or not to do will be so decided because it will be the measure required to keep that Encyclopedia safe."

"Then," said Hardin, "you come to the conclusion that we must continue our intensive campaign of doing nothing."

Pirenne said bitterly, "You have yourself demonstrated that the Empire cannot help us; though how and why it can be so, I don't understand. If compromise is necessary—"

Hardin had the nightmare-like sensation of running at top speed and getting nowhere. "There is no compromise? Don't you realize that this bosh about military bases is a particularly inferior grade of drivel? Haut Rodric told us what Anacreon was after—outright annexation and imposition of its

own feudal system of landed estates and peasant-aristocracy economy upon us. What is left of our bluff of atomic power, may force them to move slowly, but they will move nonetheless."

He had risen indignantly, and the rest rose with him—except for Jord Fara.

And then Jord Fara spoke. "Everyone will please sit down. We've gone quite far enough, I think. Come, there's no use looking so furious, Mayor Hardin; none of us has been committing treason."

"You'll have to convince me of that!"

Fara smiled gently. "You know you don't mean that. Let me speak!"

His little shrewd eyes were half closed, and the perspiration gleamed on the smooth expanse of his chin. "There seems no point in concealing that the Board has come to the decision that the real solution to the Anacreonian problem lies in what is to be revealed to us when the First Vault opens six days from now."

"Is that your contribution to the matter?"

"Yes."

"We are to do nothing, is that right, except to wait in quiet serenity and utter faith for the *deus ex machina* to pop out of the First Vault?"

"Stripped of your emotional phraseology, that's the idea."

"Such unsubtle escapism! Really, Dr Fara, such folly smacks of genius. A lesser mind would be incapable of it."

Fara smiled indulgently. "Your taste in epigrams is amusing, Hardin, but out of place. As a matter of fact, I think you remember my line of argument concerning the First Vault about three weeks ago."

"Yes, I remember it. I don't deny that it was anything but a stupid idea from the standpoint of deductive logic alone. You said—stop me when I make a mistake—that Hari Seldon was the greatest psychologist in the System; that, hence, he could foresee the tight and uncomfortable spot we're in now; that, hence, he established the First Vault as a method of telling us the way out."

"You've got the essence of the idea."

"Would it surprise you to hear that I've given considerable thought to the matter these last weeks?"

"Very flattering. With what result?"

"With the result that pure deduction is found wanting.

Again what is needed is a little sprinkling of common sense."

"For instance?"

"For instance, if he foresaw the Anacreonian mess, why not have placed us on some other planet nearer the Galactic centers? Why put us out here at all if he could see in advance the break in communication lines, our isolation from the Galaxy, the threat of our neighbors—and our helplessness because of the lack of metals on Terminus? That above all! Or if he foresaw all this, why not have warned the original settlers in advance so that they might have had time to prepare, rather than wait, as he is doing, until one foot is over the cliff, before doing so?

"And don't forget this. Even though he could foresee the problem *then*, we can see it equally well *now*. Therefore, if he could foresee the solution then, we should be able to see the solution now. After all, Seldon was not a magician. There are no trick methods of escaping from a dilemma that he can see and we can't."

"But, Hardin," reminded Fara, "we can't!"

"But you haven't *tried*. You haven't tried once. First, you refused to admit that there was a menace at all! Then you reposed an absolutely blind faith in the Emperor! Now you've shifted it to Hari Seldon. Throughout you have invariably relied on authority or on the past—never on yourselves."

His fists balled spasmodically. "It amounts to a diseased attitude—a conditioned reflex that shunts aside the independence of your minds whenever it is a question of opposing authority. There seems no doubt ever in your minds that the Emperor is more powerful than you are, or Hari Seldon wiser. And that's wrong, don't you see?"

For some reason, no one cared to answer him.

Hardin continued: "It isn't just you. It's the whole Galaxy. Pirenne heard Lord Dorwin's idea of scientific research. Lord Dorwin thought the way to be a good archaeologist was to read all the books on the subject—written by men who were dead for centuries. He thought that the way to solve archaeological puzzles was to weigh opposing authorities. And Pirenne listened and made no objections. Don't you see that there's something wrong with that?"

Again the note of near-pleading in his voice. Again no answer.

He went on: "And you men and half of Terminus as well are just as bad. We sit here, considering the Encyclopedia the

all-in-all. We consider the greatest end of science to be the classification of past data. It is important, but is there no further work to be done? We're receding and forgetting, don't you see? Here in the Periphery they've lost atomic power. In Gamma Andromeda, a power plant has blown up because of poor repairs, and the Chancellor of the Empire complains that atomic technicians are scarce. And the solution? To train new ones? Never! Instead, they're to restrict atomic power."

And for the third time: "Don't you *see*? It's Galaxy-wide. It's a worship of the past. It's a deterioration—a *stagnation*!"

He stared from one to the other and they gazed fixedly at him.

Fara was the first to recover. "Well, mystical philosophy isn't going to help us here. Let us be concrete. Do you deny that Hari Seldon could easily have worked out historical trends of the future by simple psychological technique?"

"No, of course not," cried Hardin. "But we can't rely on him for a solution. At best, he might indicate the problem, but if ever there is to be a solution, we must work it out ourselves. He can't do it for us."

Fulham spoke suddenly. "What do you mean—'indicate the problem'? We *know* the problem."

Hardin whirled on him. "You think you do? You think Anacreon is all Hardi Seldon is likely to be worried about. I disagree! I tell you, gentlemen, that as yet none of you has the faintest conception of what is really going on."

"And you do?" questioned Pirenne, hostilely.

"I think so!" Hardin jumped up and pushed his chair away. His eyes were cold and hard. "If there's one thing that's definite, it is that there's something smelly about the whole situation; something that is bigger than anything we've talked about yet. Just ask yourself this question; Why was it that among the original population of the Foundation not one first-class psychologist was included, except Bor Alurin? And *he* carefully refrained from training his pupils in more than the fundamentals."

A short silence and Fara said, "All right. Why?"

"Perhaps because a psychologist might have caught on to what this was all about—and too soon to suit Hari Seldon. As it is, we've been stumbling about, getting misty glimpses of the truth and no more. And that is what Hari Seldon wanted."

He laughed harshly. "Good day, gentlemen!"

He stalked out of the room.

Mayor Hardin chewed at the end of his cigar. It had gone out but he was past noticing that. He hadn't slept the night before and he had a good idea that he wouldn't sleep this coming night. His eyes showed it.

He said wearily, "And that covers it?"

"I think so." Yohan Lee put a hand to his chin. "How does it sound?"

"Not too bad. It's got to be done, you understand, with impudence. That is, there is to be no hesitation; no time to allow them to grasp the situation. Once we are in position to give orders, why, give them as though you were born to do so, and they'll obey out of habit. That's the essence of a coup."

"If the Board remains irresolute for even—"

"The Board? Count them out. After tomorrow, their importance as a factor in Terminus affairs won't matter a rusty half-credit."

Lee nodded slowly. "Yet it is strange that they've done nothing to stop us so far. You say they weren't entirely in the dark."

"Fara indicated as much. And Pirenne's been suspicious of me since I was elected. But, you see, they never had the capacity of really understanding what was up. Their whole training has been authoritarian. They are sure that the Emperor, just because he is the Emperor, is all-powerful. And they are sure that the Board of Trustees, simply because it is the Board of Trustees acting in the name of the Emperor, cannot be in a position where it does not give the orders. That incapacity to recognize the possibility of revolt is our best ally."

He heaved out of his chair and went to the water cooler. "They're not bad fellows, Lee, when they stick to their Encyclopedia—and we'll see that that's where they stick in the future. They're hopelessly incompetent when it comes to ruling Terminus. Go away, now, and start things rolling. I want to be alone."

He sat down on the corner of his desk and stared at the cup of water.

Space! If only he were as confident as he pretended! The Anacreonians were landing in two days and what had he to go on but a set of notions and half-guesses as to what Hari Seldon had been driving at these past fifty years? He wasn't even a real, honest-to-goodness psychologist—just a fumbler

with a little training trying to outguess the greatest mind of the age.

If Fara were right; if Anacreon were all the problem Hari Seldon had foreseen; if the Encyclopedia were all he was interested in preserving—then what price *coup d'état*?

He shrugged and drank his water.

The First Vault was furnished with considerably more than six chairs, as though a larger company had been expected. Hardin noted that thoughtfully and seated himself wearily in a corner just as far from the other five as possible.

The Board members did not seem to object to that arrangement. They spoke among themselves in whispers, which fell off into sibilant monosyllables, and then into nothing at all. Of them all, only Jord Fara seemed even reasonably calm. He had produced a watch and was staring at it somberly.

Hardin glanced at his own watch and then at the glass cubicle—absolutely empty—that dominated half the room. It was the only unusual feature of the room, for aside from that there was no indication that somewhere a speck of radium was wasting away toward that precise moment when a tumbler would fall, a connection be made and—

The lights went dim!

They didn't go out, but merely yellowed and sank with a suddenness that made Hardin jump. He had lifted his eyes to the ceiling lights in startled fashion, and when he brought them down the glass cubicle was no longer empty.

A figure occupied it—a figure in a wheelchair!

It said nothing for a few moments, but it closed the book upon its lap and fingered it idly. And then it smiled, and the face seemed all alive.

It said, "I am Hari Seldon." The voice was old and soft.

Hardin almost rose to acknowledge the introduction and stopped himself in the act.

The voice continued conversationally: "I can't see you, you know, so I can't greet you properly. I don't even know how many of you there are, so all this must be conducted informally. If any of you are standing, please sit down; and if you care to smoke, I wouldn't mind." There was a light chuckle. "Why should I? I'm not really here."

Hardin fumbled for a cigar almost automatically, but thought better of it.

Hari Seldon put away his book—as if laying it upon a desk at his side—and when his fingers let go, it disappeared.

He said, "It is fifty years now since this Foundation was established—fifty years in which the members of the Foundation have been ignorant of what it was they were working toward. It was necessary that they be ignorant, but now the necessity is gone.

"The Encyclopedia Foundation, to begin with, is a fraud, and always has been!"

There was the sound of a scramble behind Hardin and one or two muffled exclamations, but he did not turn around.

Hari Seldon was, of course, undisturbed. He went on, "It is a fraud in the sense that neither I nor my colleagues care at all whether a single volume of the Encyclopedia is ever published. It has served its purpose, since by it we extracted an imperial charter from the Emperor, by it we attracted the hundred thousand scientists necessary for our scheme, and by it we managed to keep them preoccupied while events shaped themselves, until it was too late for any of them to draw back.

"In the fifty years that you have worked on this fraudulent project—there is no use in softening phrases—your retreat has been cut off, and you have now no choice but to proceed on the infinitely more important project that was, and is, our real plan.

"To that end we have placed you on such a planet and at such a time that in fifty years you were maneuvered to the point where you no longer have freedom of action. From now on, and into the centuries, the path you must take is inevitable. You will be faced with a series of crises, as you are now faced with the first, and in each case your freedom of action will become similarly circumscribed so that you will be forced along one, and only one, path.

"It is that path which our psychology has worked out—and for a reason.

"For centuries Galactic civilization has stagnated and declined, though only a few ever realized that. But now, at least, the Periphery is breaking away and the political unity of the Empire is shattered. Somewhere in the fifty years just past is where the historians of the future will place an arbitrary line and say, 'This marks the Fall of the Galactic Empire.'

"And they will be right, though scarcely any will recognize that Fall for additional centuries.

"And after the Fall will come inevitable barbarism, a period which, our psychohistory tells us, shall, under ordinary circumstances, last from thirty to fifty thousand years. We cannot stop the Fall. We do not wish to; for Empire culture has lost whatever virility and worth it once had. But we can shorten the period of barbarism that must follow—down to a single thousand years.

"The ins and outs of that shortening, we cannot tell you; just as we could not tell you the truth about the Foundation fifty years ago. Were you to discover those ins and outs, our plan might fail; as it would have had you penetrated the fraud of the Encyclopedia earlier; for then, by knowledge, your freedom of action would be expanded and the number of additional variables introduced would become greater than our psychology could handle.

"But you won't, for there are no psychologists on Terminus, and never were, but for Alurin—and he was one of us.

"But this I can tell you: Terminus and its companion Foundation at the other end of the Galaxy are the seeds of the Renaissance and the future founders of the Second Galactic Empire. And it is the present crisis that is starting Terminus off to that climax.

"This, by the way, is a rather straightforward crisis, much simpler than many of those that are ahead. To reduce it to its fundamentals, it is this: You are a planet suddenly cut off from the still-civilized centers of the Galaxy, and threatened by your stronger neighbors. You are a small world of scientists surrounded by vast and rapidly expanding reaches of barbarism. You are an island of atomic power in a growing ocean of more primitive energy, but are helpless despite that, because of your lack of metals.

"You see, then, that you are faced by hard necessity, and that action is forced on you. The nature of that action—that is, the solution to your dilemma—is, of course, obvious!"

The image of Hari Seldon reached into open air and the book once more appeared in his hand. He opened it and said:

"But whatever devious course your future history may take, impress it always upon your descendants that the path has been marked out, and that at its end is a new and greater Empire!"

And as his eyes bent to his book, he flicked into nothingness, and the lights brightened once more.

Hardin looked up to see Pirenne facing him, eyes tragic and lips trembling.

The chairman's voice was firm but toneless. "You were right, it seems. If you will see us tonight at six, the Board will consult with you as to the next move."

They shook his hand, each one, and left; and Hardin smiled to himself. They were fundamentally sound at that; for they were scientists enough to admit that they were wrong—but for them, it was too late.

He looked at his watch. By this time, it was all over. Lee's men were in control and the Board was giving orders no longer.

The Anacreonians were landing their first spaceships tomorrow, but that was all right, too. In six months, *they* would be giving orders no longer.

In fact, as Hari Seldon had said, and as Salvor Hardin had guessed since the day that Anselm haut Rodric had first revealed to him Anacreon's lack of atomic power—the solution to this first crisis was obvious.

Obvious as all hell!

THE PUSH OF A FINGER

Astounding SF,

May

by Alfred Bester (1913-)

*Although Alfred Bester appeared in the sf magazines as early as 1939, he became a major figure in the field only in the early 1950s, when a score of outstanding short stories and the unforgettable novels *The Demolished Man* (1953) and *The Stars My Destination* (1956) firmly established his reputation as one of the most innovative craftsmen in science fiction. He had shown evidence of his talent much earlier, however, in stories like "Adam and No Eve" (see volume 3) and the present selection.*

"The Push of a Finger" is a funny and bold story about the necessity of adaptability and the consequences of the failure to adapt, and contains all of the ingredients that a decade later would thrust Alfie Bester into the forefront of the science fiction world.

(Alfie seemed to hound me as I look back on it. When I published "Nightfall," he had "Adam and No Eve" in the same issue and at the time it seemed to me that people paid more attention to his story. Then, when I published "Foundation," there was Alfie with "The Push of a Finger" and *again*— But it's all right. He's so affectionate, Alfie is, that it is impossible to imagine him to mean any harm. In fact, to greet Alfie incautiously is to be kissed by him and I always make sure I'm standing behind someone when I say hello to him.—I.A.)

I think it's about time someone got all those stories together and burned them. You know the kind I mean—X, the

mad scientist, wants to change the world; Y, the ruthless dictator, wants to rule the world; Z, the alien planet, wants to destroy the world.

Let me tell you a different kind of story. It's about a whole world that wanted to rule one man—about a planet of people who hunted down a single individual in an effort to change his life, yes, and even destroy him, if it had to be. It's a story about one man against the entire Earth, but with the positions reversed.

They've got a place in Manhattan City that isn't very well known. Not known, I mean, in the sense that the cell nucleus wasn't known until scientists began to get the general idea. This was an undiscovered cell nucleus, and still is, I imagine. It's the pivot of our Universe. Anything that shakes the world comes out of it; and, strangely enough, any shake that does come out of it is intended to prevent worse upheavals.

Don't ask questions now. I'll explain as I go along.

The reason the average man doesn't know about this particular nucleus is that he'd probably go off his nut if he did. Our officials make pretty sure it's kept secret, and although some nosybodies would scream to high heaven if they found out something was being kept from the public, anyone with sense will admit it's for the best.

It's a square white building about ten stories high and it looks like an abandoned hospital. Around nine o'clock in the morning you can see a couple of dozen ordinary looking citizens arriving, and at the end of the workday some of them leave. But there's a considerable number that stay overtime and work until dawn or until the next couple of dawns. They're cautious about keeping windows covered so that high-minded citizens won't see the light and run to the controller's office yawping about overtime and breaking down Stability. Also they happen to have permission.

Yeah, it's real big-time stuff. These fellas are so important, and their work is so important they've got permission to break the one unbreakable law. They can work overtime. In fact as far as they're concerned they can do any damned thing they please, Stability or no Stability—because it so happens they're the babies that maintain Stability. How? Take it easy. We've got plenty of time—and I'll tell you.

It's called the Prog Building and it's one of the regular newspaper beats, just like the police courts used to be a couple of hundred years ago. Every paper sends a reporter down there at three o'clock. The reporters hang around and bull for

a while and then some brass hat interviews them and talks policy and economics and about how the world is doing and how it's going to do. Usually it's dull stuff but every once in a while something really big comes out, like the time they decided to drain the Mediterranean. They—

What?

You never heard of that? Say, who is this guy anyway? Are you kidding? From the moon, hey, all your life? Never been to the home planet? Never heard about what goes on? A real cosmic hick. Baby, you can roll me in a rug. I thought your kind died out before I was born. Okay, you go ahead and ask questions whenever you want. Maybe I'd better apologize now for the slang. It's part and parcel of the newspaper game. Maybe you won't be able to understand me sometimes, but I've got a heart of gold.

Anyway—I had the regular three o'clock beat at the Prog Building and this particular day I got there a little early. Seems the *Trib* had a new reporter on the beat, guy by the name of Halley Hogan, whom I'd never met. I wanted to get together with him and talk policy. For the benefit of the hermit from the moon I'll explain that no two newspapers in any city are permitted to share the same viewpoint or opinion.

I thought all you boys knew that. Well, sure—I'm not kidding. Look. Stability is the watchword of civilization. The world must be Stable, right? Well, Stability doesn't mean stasis. Stability is reached through an equipoise of opposing forces that balance each other. Newspapers are supposed to balance the forces of public opinion so they have to represent as many different points of view as possible. We reporters always got together before a story, or after, and made sure none of us would agree on our attitudes. You know—some would say it was a terrible thing and some would say it was a wonderful thing and some would say it didn't mean a thing and so on. I was with the *Times* and our natural competitor and opposition was the *Trib*.

The newspaper room in the Prog Building is right next to the main offices, just off the foyer. It's a big place with low-beamed ceiling and walls done in synthetic wood panels. There was a round table in the center surrounded by hardwood chairs, but we stood the chairs along the wall and dragged up the big deep leather ones. We all would sit with our heels on the table and every chair had a groove on the table in front of it. There was an unwritten law that no shop

could be talked until every groove was filled with a pair of heels. That's a newspaper man's idea of a pun.

I was surprised to find almost everybody was in. I slipped into my place and upped with my feet and then took a look around. Every sandal showed except the pair that should have been opposite me, so I settled back and shut my eyes. That was where the *Trib* man should have been parked, and I certainly couldn't talk without my opposition being there to contradict me.

The *Post* said, "What makes, Carmichael?"

I said, "Ho-hum—"

The *Post* said, "Don't sleep, baby, there's big things cookin'."

The *Ledger* said, "Shuddup, you know the rules—" He pointed to the vacant segment of the table.

I said, "You mean the law of the jungle."

The *Record*, who happened to be the *Ledger's* opposition, said, "Old Bobbus left. He ain't coming in no more."

"How come?"

"Got a Stereo contract. Doing comedy scenarios."

I thought to myself, *Oi, that means another wrestling match*. You see, whenever new opposition reporters get together, they're supposed to have a symbolic wrestling match. I said supposed. It always turns into a brawl with everybody else having the fun.

"Well," I said, "this new Hogan probably doesn't know the ropes yet. I guess I'll have to go into training. Anybody seen him? He look strong?" They all shook their heads and said they didn't know him. "Okay, then let's gab without him—"

The *Post* said, "Your correspondent has it that the pot's a-boilin'. Every bigwig in town is in there." He jabbed his thumb toward the main offices.

We all gave the door a glance, only, like I always did, I tried to knock it in with a look. You see, although all of us came down to the Prog Building every day, none of us knew what was inside. Yeah, 's' fact. We just came and sat and listened to the big shots and went away. Like specters at the feast. It griped all of us, but me most of all.

I would dream about it at night. How there was a Hyperman living in the Prog Building, only he breathed chlorine and they kept him in tanks. Or that they had the mummies of all the great men of the past which they reanimated every afternoon to ask questions. Or it would be a cow in some

dreams that was full of brains and they'd taught it to moo in code. There were times when I thought that if I didn't get upstairs into the Prog Building I'd burst from frustration.

So I said, "You think they're going to fill up the Mediterranean again?"

The *Ledger* laughed. He said, "I hear tell they're going to switch poles. North to south and vice versa."

The *Record* said, "You don't think they could?"

The *Ledger* said, "I wish they would—if it'd improve my bridge."

I said, "Can it, lads, and let's have the dope."

The *Journal* said, "Well, all the regulars are in—controller, vice con and deputy vice con. But there also happens to be among those present—the chief stabilizer."

"No!"

He nodded and the others nodded. "Fact. The C-S himself. Came up by pneumatic from Washington."

I said, "Oh, mamma! Five'll get you ten they're digging up Atlantis this time."

The *Record* shook his head. "The C-S didn't wear a digging look."

Just then the door to the main office shoved open and the C-S came thundering out. I'm not exaggerating. Old Groating had a face like Moses, beard and all, and when he frowned, which was now, you expected lightning to crackle from his eyes. He breezed past the table with just one glance from the blue quartz he's got for eyes, and all our legs came down with a crash. Then he shot out of the room so fast I could hear his rep tunic swish with quick whistling sounds.

After him came the controller, the vice con and the deputy vice con, all in single file. They were frowning, too, and moving so rapidly we had to jump to catch the deputy. We got him at the door and swung him around. He was short and fat and trouble didn't sit well on his pudgy face. It made him look slightly lopsided.

He said, "Not now, gentlemen."

"Just a minute, Mr. Klang," I said. "I don't think you're being fair to the press."

"I know it," the deputy said, "and I'm sorry, but I really cannot spare the time."

I said, "So we report to fifteen million readers that time can't be spared these days—"

He stared at me, only I'd been doing some staring myself and I knew I had to get him to agree to give us a release.

I said, "Have a heart. If anything's big enough to upset the stability of the chief stabilizer, we ought to get a look-in."

That worried him, and I knew it would. Fifteen million people would be more than slightly unnerved to read that the C-S had been in a dither.

"Listen," I said. "What goes on? What were you talking about upstairs?"

He said, "All right. Come down to my office with me. We'll prepare a release."

Only I didn't go out with the rest of them. Because, you see, while I'd been nudging the deputy I'd noticed that all of them had rushed out so fast they'd forgotten to close the office door. It was the first time I'd seen it unlocked and I knew I was going to go through it this time. That was why I'd wheedled that release out of the deputy. I was going to get upstairs into the Prog Building because everything played into my hands. First, the door being left open. Second, the man from the *Trib* not being there.

Why? Well, don't you see? The opposition papers always paired off. The *Ledger* and the *Record* walked together and the *Journal* and the *News* and so on. This way I was alone with no one to look for me and wonder what I was up to. I pushed around in the crowd a little as they followed the deputy out, and managed to be the last one in the room. I slipped back behind the door jamb, waited a second and then streaked across to the office door. I went through it like a shot and shut it behind me. When I had my back against it I took a breath and whispered, "Hyperman, here I come!"

I was standing in a small hall that had synthetic walls with those fluorescent paintings on them. It was pretty short, had no doors anywhere, and led toward the foot of a white staircase. The only way I could go was forward, so I went. With that door locked behind me I knew I would be slightly above suspicion—but only slightly, my friends, only slightly. Sooner or later someone was going to ask who I was.

The stairs were very pretty. I remember them because they were the first set I'd ever seen outside the Housing Museum. They had white even steps and they curved upward like a conic section. I ran my fingers along the smooth stone balustrade and trudged up expecting anything from a cobra to one of Tex Richard's Fighting Robots to jump out at me. I was scared to death.

I came to a square railed landing and it was then I first

sensed the vibrations. I'd thought it was my heart whopping against my ribs with that peculiar *bam-bam-bam* that takes your breath away and sets a solid lump of cold under your stomach. Then I realized this pulse came from the Prog Building itself. I trotted up the rest of the stairs on the double and came to the top. There was a sliding door there. I took hold of the knob and thought: "Oh, well, they can only stuff me and put me under glass"—so I shoved the door open.

Boys, this was it—that nucleus I told you about. I'll try to give you an idea of what it looked like because it was the most sensational thing I've ever seen—and I've seen plenty in my time. The room took up the entire width of the building and it was two stories high. I felt as though I'd walked into the middle of a clock. Space was literally filled with the shimmer and spin of cogs and cams that gleamed with the peculiar highlights you see on a droplet of water about to fall. All of those thousands of wheels spun in sockets of precious stone—just like a watch only bigger—and those dots of red and yellow and green and blue fire burned until they looked like a painting by that Frenchman from way back. Seurat was his name.

The walls were lined with banks of Computation Integrators—you could see the end-total curves where they were plotted on photoelectric plates. The setting dials for the Integrators were all at eye level and ran around the entire circumference of the room like a chain of enormous white-faced periods. That was about all of the stuff I could recognize. The rest just looked complicated and bewildering.

That *Bam-bam-bam* I told you about came from the very center of the room. There was a crystal octahedron maybe ten feet high, nipped between vertical axes above and below. It was spinning slowly so that it looked jerky, and the vibration was the sound of the motors that turned it. From way high up there were shafts of light projected at it. The slow turning facets caught those beams and shattered them and sent them dancing through the room. Boys—it was really sensational.

I took a couple of steps in and then a little old cōot in a white jacket bustled across the room, saw me, nodded, and went about his business. He hadn't taken more than another three steps when he stopped and came back to me. It was a real slow take.

He said, "I don't quite—" and then he broke off doubt-

fully. He had a withered, faraway look, as though he'd spent all his life trying to remember he was alive.

I said, "I'm Carmichael."

"Oh yes!" he began, brightening a little. Then his face got dubious again.

I played it real smart. I said, "I'm with Stabilizer Groating."

"Secretary?"

"Yeah."

"You know, Mr. Mitchell," he said, "I can't help feeling that despite the gloomier aspects there are some very encouraging features. The Ultimate Datum System that we have devised should bring us down to surveys of the near future in a short time—" He gave me a quizzical glance like a dog begging for admiration on his hind legs.

I said, "Really?"

"It stands to reason. After all, once a technique has been devised for pushing analysis into the absolute future, a comparatively simple reversal should bring it as close as tomorrow."

I said, "It should at that"—and wondered what he was talking about. Now that some of the fright had worn off I was feeling slightly disappointed. Here I expected to find the Hyperman who was handing down Sinai decrees to our bosses and I walk into a multiplied clock.

He was rather pleased. He said, "You think so?"

"I think so."

"Will you mention that to Mr. Groating? I feel it might encourage him—"

I got even smarter. I said, "To tell you the truth, sir, the Stabilizer sent me up for a short review. I'm new to the staff and unfortunately I was delayed in Washington."

He said, "*Tut-Tut*, forgive me. Step this way, Mr. . . . Mr. Ahh—"

So I stepped his way and we went weaving through the clockworks to a desk at one side of the room. There were half a dozen chairs behind it and he seated me alongside himself. The flat top of the desk was banked with small tabs and push buttons so that it looked like a stenotype. He pressed one stud and the room darkened. He pressed another and the *bam-bam* quickened until it was a steady hum. The octahedron crystal whirled so quickly that it became a shadowy mist of light under the projectors.

"I suppose you know," the old coot said in rather self-con-

scious tones, "that this is the first time we've been able to push our definitive analysis to the ultimate future. We'd never have done it if Wiggons hadn't developed his self-checking data systems."

I said, "Good for Wiggons," and I was more confused than ever. I tell you, boys, it felt like waking up from a dream you couldn't quite remember. You know that peculiar sensation of having everything at the edge of your mind so to speak and not being able to get hold of it—I had a thousand clues and inferences jangling around in my head and none of them would interlock. But I knew this was big stuff.

Shadows began to play across the crystal. Off-focus images and flashes of color. The little old guy murmured to himself and his fingers plucked at the keyboard in a quick fugue of motion. Finally he said, "Ah!" and sat back to watch the crystal. So did I.

I was looking through a window in space, and beyond that window I saw a single bright star in the blackness. It was sharp and cold and so brilliant it hurt your eyes. Just beyond the window, in the foreground, I saw a spaceship. No, none of your cigar things or ovate spheroids or any of that. It was a spaceship that seemed to have been built mostly in afterthoughts. A great rambling affair with added wings and towers and helter-skelter ports. It looked like it'd been built just to hang there in one place.

The old coot said, "Watch close now, Mr. Muggins, things happen rather quickly at this tempo."

Quickly? They practically sprinted. There was a spurt of activity around the spaceship. Towers went up and came down; the bug-like figures of people in space armor bustled about; a little cruiser, shaped like a fat needle, sped up to it, hung around a while and then sped away. There was a tense second of waiting and then the star blotted out. In another moment the spaceship was blotted out, too. The crystal was black.

My friend, the goofy professor, touched a couple of studs and we had a long view. There were clusters of stars spread before me, sharply, brilliantly in focus. As I watched, the upper side of the crystal began to blacken. In a few swift moments the stars were blacked out. Just like that. Blooey! It reminded me of school when we added carbon ink to a drop under the mike just to see how the amoebas would take it.

He punched the buttons like crazy and we had more and more views of the Universe, and always that black cloud

crept along, blotting everything out. After a while he couldn't find any more stars. There was nothing but blackness. It seemed to me that it wasn't more than an extra-special Stereo Show, but it chilled me nevertheless. I started thinking about those amoebas and feeling sorry for them.

The lights went on and I was back inside the clock again. He turned to me and said, "Well, what do you think?"

I said, "I think it's swell."

That seemed to disappoint him. He said, "No, no—I mean, what do you make of it? Do you agree with the others?"

"With Stabilizer Groating, you mean?"

He nodded.

I said, "You'll have to give me a little time to think it over. It's rather—startling."

"By all means," he said, escorting me to the door, "do think it over. Although"—he hesitated with his hand on the knob—"I shouldn't agree with your choice of the word 'startling.' After all, it's only what we expected all along. The Universe must come to an end one way or another."

Think? Boys, the massive brain practically fumed as I went back downstairs. I went out into the press room and I wondered what there was about a picture of a black cloud that could have upset the Stabilizer. I drifted out of the Prog Building and decided I'd better go down to the controller's office for another bluff, so I didn't drift any more. There was a pneumatic pick-up at the corner. I caught a capsule and clicked off the address on the dial. In three and a half minutes I was there.

As I turned the overhead dome back and started to step out of my capsule, I found myself surrounded by the rest of the newspaper crowd.

The *Ledger* said, "Where you been, my friendly, we needed your quick brain but bad."

I said, "I'm still looking for Hogan. I can't cover a thing until I've seen him. What's this need for brains?"

I got out of the capsule and showed my empty pocket.

The *Ledger* said, "We're not soaping you for a loan—we needed interpolation."

"Aha?"

The *Record* said, "The dope means interpretation. We got one of those official releases again. All words and no sense."

"I mean interpolation," the *Ledger* said. "We got to have someone read implications into this barren chaff."

I said, "Brothers, you want exaggeration and I'm not going to be it this time. Too risky."

So I trotted up the ramp to the main floor and went to the deputy vice's office and then I thought, "I've got a big thing here, why bother with the small fry?" I did a turnabout and went straight to the controller's suite. I knew it would be tough to get in because the controller has live secretaries—no voders. He also happens to have four receptionists. Beautiful, but tough.

The first never saw me. I breezed right by and was in the second anteroom before she could say, "What is it, pa-lee-azz?" The second was warned by the bang of the door and grabbed hold of my arm as I tried to go through. I got past anyway, with two of them holding on, but number three added her lovely heft and I bogged down. By this time I was within earshot of the controller so I screamed, "Down with Stability!"

Sure I did. I also shouted, "Stability is all wrong! I'm for Chaos, Hurray for Chaos!" and a lot more like that. The receptionists were shocked to death and one of them put in a call for emergency and a couple of guys hanging around were all for boffing me. I kept on downing with Stability and fighting toward the sanctum sanctorum et cetera and having a wonderful time because the three girls hanging on to me were strictly class and I happily suffocated on Exuberant No. 5. Finally the controller came out to see what made the noise.

They let go of me and the controller said, "What's the meaning of this? . . . Oh, it's you."

I said, "Excuse it, please."

"Is this your idea of a joke, Carmichael?"

"No, sir, but it was the only quick way to get to you."

"Sorry, Carmichael, but it's a little too quick."

I said, "Wait a minute, sir."

"Sorry, I'm extremely busy." He looked worried and impatient all at once.

I said, "You've got to give me a moment in private."

"Impossible. See my secretary." He turned toward his office.

"Please, sir—"

He waved his hand and started through the door. I took a jump and caught him by the elbow. He was sputtering furiously when I swung him around, but I got my arms around him and gave him a hug. When my mouth was against his

ear I whispered, "I've been upstairs in the Prog Building. I know!"

He stared at me and his jaw dropped. After a couple of vague gestures with his hands he motioned me in with a jerk of his head. I marched straight into the controller's office and almost fell down dead. The stabilizer was there. Yeah, old Jehovah Groating himself, standing before the window. All he needed was the stone tablets in his arms—or is it thunderbolts?

I felt very, very sober, my friends, and not very smart any more because the stabilizer is a sobering sight no matter how you kid about him. I nodded politely and waited for the controller to shut the door. I was wishing I could be on the other side of the door. Also I was wishing I'd never gone upstairs into the Prog Building.

The controller said, "This is John Carmichael, Mr. Groating, a reporter for the *Times*."

We both said, "How-d'you-do?" only Groating said it out loud. I just moved my lips.

The controller said, "Now, Carmichael, what's this about the Prog Building?"

"I went upstairs, sir."

He said, "You'll have to speak a little louder."

I cleared my throat and said, "I went upstairs, sir."

"You what!"

"W-went upstairs."

This time lightning really did flash from the C-S's eyes.

I said, "If I've made trouble for anyone, I'm sorry. I've been wanting to get up there for years and . . . and when I got the chance today, I couldn't resist it—" Then I told them how I sneaked up and what I did.

The controller made a terrible fuss about the whole affair, and I knew—don't ask me how, I simply knew—that something drastic was going to be done about it unless I talked plenty fast. By this time, though, the clues in my head were beginning to fall into place. I turned directly to the C-S and I said: "Sir, Prog stands for Prognostication, doesn't it?"

There was silence. Finally Groating nodded slowly.

I said, "You've got some kind of fortune-teller up there. You go up every afternoon and get your fortune told. Then you come out and tell the press about it as though you all thought it up by yourselves. Right?"

The controller sputtered, but Groating nodded again.

I said, "This afternoon the end of the Universe was prognosticated."

Another silence. At last Groating sighed wearily. He shut the controller up with a wave of his hand and said, "It seems Mr. Carmichael does know enough to make things awkward all around."

The controller burst out, "It's no fault of mine. I always insisted on a thorough guard system. If we had guarded the—"

"Guards," Groating interrupted, "would only have upset existing Stability. They would have drawn attention and suspicion. We were forced to take the chance of a slip-up. Now that it's happened we must make the best of it."

I said, "Excuse me, sir. I wouldn't have come here just to boast. I could have kept quiet about it. What bothers me is what bothered you?"

Groating stared at me for a moment, then turned away and began to pace up and down the room. There was no anger in his attitude; if there had been, I wouldn't have been as scared as I was. It was a big room and he did a lot of pacing and I could see he was coldly analyzing the situation and deciding what was to be done with me. That frigid appraisal had me trembling.

I said, "I'll give you my word not to mention this again—if that'll do the trick."

He paid no attention—merely paced. My mind raced crazily through all the nasty things that could happen to me. Like solitary for life. Like one-way exploration. Like an obliterated memory track which meant I would have lost my twenty-eight years, not that they were worth much to anyone but me.

I got panicky and yelled, "You can't do anything to me. Remember Stability—" I began to quote the Credo as fast as I could remember: "The *status quo* must be maintained at all costs. Every member of society is an integral and essential factor of the *status quo*. A blow at the Stability of any individual is a blow aimed at the Stability of society. Stability that is maintained at the cost of so much as a single individual is tantamount to Chaos—"

"Thank you, Mr. Carmichael," the C-S interrupted. "I have already learned the Credo."

He went to the controller's desk and punched the teletype keys rapidly. After a few minutes of horrible waiting the answer came clicking back. Groating read the message, nodded

and beckoned to me. I stepped up to him and, boys, I don't know how the legs kept from puddling on the floor.

Groating said, "Mr. Carmichael, it is my pleasure to appoint you confidential reporter to the Stability Board for the duration of this crisis."

I said, "Awk!"

Groating said, "We've maintained Stability, you see, and insured your silence. Society cannot endure change—but it can endure and welcome harmless additions. A new post has been created and you're it."

I said, "Th-thanks."

"Naturally, there will be an advance in credit for you. That is the price we pay, and gladly. You will attach yourself to me. All reports will be confidential. Should you break confidence, society will exact the usual penalty for official corruption. Shall I quote the Credo on that point?"

I said, "No, sir!" because I knew that one by heart. The usual penalty isn't pleasant. Groating had me beautifully hog-tied. I said, "What about the *Times*, sir?"

"Why," Groating said, "you will continue your usual duties whenever possible. You will submit the official releases as though you had no idea at all of what was really taking place. I'm sure I can spare you long enough each day to make an appearance at your office."

Suddenly he smiled at me and in that moment I felt better. I realized that he was far from being a Jehovian menace—in fact, that he'd done all he could to help me out of the nasty spot my curiosity had got me into. I grinned back and on impulse shoved out my hand. He took it and gave it a shake. Everything was fine.

The C-S said, "Now that you're a fellow official, Mr. Carmichael, I'll come to the point directly. The Prog Building, as you've guessed, is a Prognostication Center. With the aid of a complete data system and a rather complex series of Integraps we have been able to . . . to tell our fortunes, as you put it."

I said, "I was just shooting in the dark, sir. I really don't believe it."

Groating smiled. He said, "Nevertheless it exists. Prophecy is far from being a mystical function. It is a very logical science based on experimental factors. The prophecy of an eclipse to the exact second of time and precise degree of longitude strikes the layman with awe. The scientist knows it is the result of precise mathematical work with precise data."

"Sure," I began, "but—"

Groating held up his hand. "The future of the world line," he said, "is essentially the same problem magnified only by the difficulty of obtaining accurate data—and enough data. For example: Assuming an apple orchard, what are the chances of apples being stolen?"

I said, "I couldn't say. Depends, I suppose, on whether there are any kids living in the neighbourhood."

"All right," Groating said, "that's additional data. Assuming the orchard and the small boys, what are the chances of stolen apples?"

"Pretty good."

"Add data. A locust plague is reported on the way."

"Not so good."

"More data. Agriculture reports a new efficient locust spray."

"Better."

"And still more data. In the past years the boys have stolen apples and been soundly punished. Now what are the chances?"

"Maybe a little less."

"Continue the experimental factors with an analysis of the boys. They are headstrong and will ignore punishment. Add also the weather forecasts for the summer; add the location of the orchard and attitude of owner. Now sum up: Orchard plus boys plus thefts plus punishment plus character plus locusts plus spray plus—"

I said, "Good heavens!"

"You're overwhelmed by the detail work," Groating smiled, "but not by the lack of logic. It is possible to obtain all possible data on the orchard in question and integrate the factors into an accurate prophecy not only as to the theft, but as to the time and place of theft. Apply this example to our own Universe and you can understand the working of the Prognosis Building. We have eight floors of data analyzers. The shifted factors are fed into the Integrators and—presto, prophecy!"

I said, "Presto, my poor head!"

"You'll get used to it in time."

I said, "The pictures?"

Groating said, "The solution of a mathematical problem can take any one of a number of forms. For Prognosis we have naturally selected a picturization of the events themselves. Any major step in government that is contemplated is

prepared in data form and fed into the Integrator. The effect of that step on the world line is observed. If it is beneficial, we take that step; if not, we abandon it and search for another—"

I said, "And the picture I saw this afternoon?"

Groating sobered. He said, "Up until today, Mr. Carmichael, we have not been able to integrate closer to the present than a week in the future—or deeper into the future than a few hundred years. Wiggon's new data technique has enabled us to push to the end of our existence, and it is perilously close. You saw the obliteration of our Universe take place less than a thousand years from now. This is something we must prevent at once."

"Why all the excitement? Surely something will happen during the next ten centuries to avoid it."

"What will happen?" Groating shook his head. "I don't think you understand our problem. On the one hand you have the theory of our society. Stability. You yourself have quoted the Credo. A society which must maintain its Stability at the price of instability is Chaos. Keep that in mind. On the other hand we cannot wait while our existence progresses rapidly toward extinction. The closer it draws to that point, the more violent the change will have to be to alter it."

"Think of the progress of a snowball that starts at the top of a mountain and rolls down the slopes, growing in bulk until it smashes an entire house at the bottom. The mere push of a finger is sufficient to alter its future when it starts—a push of a finger will save a house. But if you wait until the snowball gathers momentum you will need violent efforts to throw the tons of snow off the course."

I said, "Those pictures I saw were the snowball hitting our house. You want to start pushing the finger now—"

Groating nodded. "Our problem now is to sift the billions of factors stored in the Prog Building and discover which of them is that tiny snowball."

The controller, who had been silent in a state of wild suppression all the while, suddenly spoke up. "I tell you it's impossible, Mr. Groating. How can you dig the one significant factor out of all those billions?"

Groating said, "It will have to be done."

"But there's an easier way," the controller cried. "I've been suggesting it all along. Let's attempt the trial and error method. We instigate a series of changes at once and see

whether or not the future line is shifted. Sooner or later we're bound to strike something."

"Impossible," Groating said. "You're suggesting the end of Stability. No civilization is worth saving if it must buy salvation at the price of its principles."

I said, "Sir, I'd like to make a suggestion."

They looked at me. The C-S nodded.

"It seems to me that you're both on the wrong track. You're searching for a factor from the present. You ought to start in the future."

"How's that?"

"It's like if I said old maids were responsible for more clover. You'd start investigating the old maids. You ought to start with the clover and work backwards."

"Just what are you trying to say, Mr. Carmichael?"

"I'm talking about *a posteriori* reasoning. Look, sir, a fella by the name of Darwin was trying to explain the balance of nature. He wanted to show the chain of cause and effect. He said in so many words that the number of old maids in a town governed the growth of clover, but if you want to find out how, you've got to work it out *a posteriori*; from effect to cause. Like this: Only bumblebees can fertilize clover. The more bumblebees, the more clover. Field mice attack bumblebee nests, so the more field mice, the less clover. Cats attack mice. The more cats, the more clover. Old maids keep cats. The more old maids . . . the more clover. Q.E.D."

"And now," Groating laughed, "construe."

"Seems to me you ought to start with the catastrophe and follow the chain of causation, link by link, back to the source. Why not use the Prognosticator backwards until you locate the moment when the snowball first started rolling?"

There was a very long silence while they thought it over. The controller looked slightly bewildered and he kept muttering: Cats—clover—old maids—But I could see the C-S was really hit. He went to the window and stood looking out, as motionless as a statue. I remember staring past his square shoulder and watching the shadows of the helios flicking noiselessly across the façade of the Judiciary Building opposite us.

It was all so unreal—this frantic desperation over an event a thousand years in the future; but that's Stability. It's strictly the long view. Old Cyrus Brennerhaven of the *Morning Globe* had a sign over his desk that read: If you take care of the tomorrows, the todays will take care of themselves.

Finally Groating said, "Mr. Carmichael, I think we'd better go back to the Prog Building—"

Sure I felt proud. We left the office and went down the hall toward the pneumatics and I kept thinking, *I've given an idea to the Chief Stabilizer. He's taken a suggestion from me!* A couple of secretaries had rushed down the hall ahead of us when they saw us come out, and when we got to the tubes, three capsules were waiting for us. What's more, the C-S and the controller stood around and waited for *me* while I contacted my city editor and gave him the official release. The editor was a little sore about my disappearance, but I had a perfect alibi. I was still looking for Hogan. That, my friends, was emphatically that.

At the Prog Building we hustled through the main offices and back up the curved stairs. On the way the C-S said he didn't think we ought to tell Yarr, the little old coot I'd hoodwinked, the real truth. It would be just as well, he said, to let Yarr go on thinking I was a confidential secretary.

So we came again to that fantastic clockwork room with its myriad whirling cams and the revolving crystal and the hypnotic *bam-bam* of the motors. Yarr met us at the door and escorted us to the viewing desk with his peculiar absentminded subservience. The room was darkened again, and once more we watched the cloud of blackness seep across the face of the Universe. The sight chilled me more than ever, now that I knew what it meant.

Groating turned to me and said: "Well, Mr. Carmichael, any suggestions?"

I said, "The first thing we ought to find out is just what that spaceship has to do with the black cloud . . . don't you think so?"

"Why yes, I do." Groating turned to Yarr and said, "Give us a close-up of the spaceship and switch in sound. Give us the integration at normal speed."

Yarr said, "It would take a week to run the whole thing off. Any special moment you want, sir?"

I had a hunch. "Give us the moment when the auxiliary ship arrives."

Yarr turned back to his switchboard. We had a close-up of a great round port. The sound mechanism clicked on, running at high speed with a peculiar *wheetledy-woodledy-weedledy* garble of shrill noises. Suddenly the cruiser shot into view. Yarr slowed everything down to normal speed.

The fat needle nosed into place, the ports clanged and hissed as the suction junction was made. Abruptly, the scene shifted and we were inside the lock between the two ships. Men in stained dungarees, stripped to the waist and sweating, were hauling heavy canvas-wrapped equipment into the mother ship. To one side two elderly guys were talking swiftly:

"You had difficulty?"

"More than ever. Thank God this is the last shipment."

"How about credits?"

"Exhausted."

"Do you mean that?"

"I do."

"I can't understand it. We had over two million left."

"We lost all that through indirect purchases and—"

"And what?"

"Bribes, if you must know."

"Bribes?"

"My dear sir, you can't order cyclotrons without making people suspicious. If you so much as mention an atom today, you accuse yourself."

"Then we all stand accused here and now."

"I'm not denying that."

"What a terrible thing it is that the most precious part of our existence should be the most hated."

"You speak of—"

"The atom."

The speaker gazed before him meditatively, then sighed and turned into the shadowy depths of the spaceship.

I said, "All right, that's enough. Cut into the moment just before the blackout occurs. Take it inside the ship."

The integrators quickened and the sound track began its shrill babble again. Quick scenes of the interior of the mother ship flickered across the crystal. A control chamber, roofed with a transparent dome passed repeatedly before us, with the darting figures of men snapping through it. At last the Integrator fixed on that chamber and stopped. The scene was frozen into a still photograph—a tableau of half a dozen half-naked men poised over the controls, heads tilted back to look through the dome.

Yarr said, "It doesn't take long. Watch closely."

I said, "Shoot."

The scene came to life with a *blurp*.

"—ready on the tension screens?"

"Ready, sir."

"Power checked?"

"Checked and ready, sir."

"Stand by, all. Time?"

"Two minutes to go."

"Good—" The graybeard in the center of the chamber paced with hands clasped behind him, very much like a captain on his bridge. Clearly through the sound mechanism came the thuds of his steps and the background hum of waiting mechanism.

The graybeard said: Time?"

"One minute forty seconds."

"Gentlemen: In these brief moments I should like to thank you all for your splendid assistance. I speak not so much of your technical work, which speaks for itself, but of your willingness to exile yourselves and even incriminate yourselves along with me—Time?"

"One twenty-five."

"It is a sad thing that our work, which is intended to grant the greatest boon imaginable to the Universe, should have been driven into secrecy. Limitless power is so vast a concept that even I cannot speculate on the future it will bring to our worlds. In a few minutes, after we have succeeded, all of us will be universal heroes. Now, before our work is done, I want all of you to know that to me you are already heroes—Time?"

"One ten."

"And now, a warning. When we have set up our spacial partition membrane and begun the osmotic transfer of energy from hyperspace to our own there may be effects which I have been unable to predict. Raw energy pervading our space may also pervade our nervous systems and engender various unforeseen conditions. Do not be alarmed. Keep well in mind the fact that the change cannot be anything but for the better—Time?"

"Fifty seconds."

"The advantages? Up to now mathematics and the sciences have merely been substitutes for what man should do for himself. So FitzJohn preached in his first lecture, and so we are about to prove. The logical evolution of energy mechanics is not toward magnification and complex engineering development, but toward simplification—toward the concentration of all those powers within man himself—Time?"

"Twenty seconds."

"Courage, my friends. This is the moment we have worked for these past ten years. Secretly. Criminally. So it has always been with those who have brought man his greatest gifts."

"Ten seconds."

"Stand by, all."

"Ready all, sir."

The seconds ticked off with agonizing slowness. At the moment of zero the workers were galvanized into quick action. It was impossible to follow their motions or understand them, but you could see by the smooth timing and interplay that they were beautifully rehearsed. There was tragedy in those efforts for us who already knew the outcome.

As quickly as they had begun, the workers stopped and peered upward through the crystal dome. Far beyond them, crisp in the velvet blackness, that star gleamed, and as they watched, it winked out.

They started and exclaimed, pointing. The graybeard cried:

"It's impossible!"

"What is it, sir?"

"I—"

And in that moment blackness enveloped the scene.

I said, "Hold it—"

Yarr brought up the lights and the others turned to look at me. I thought for a while, idly watching the shimmering cams and cogs around me. Then I said, "It's a good start. The reason I imagine you gentlemen have been slightly bewildered up to now is that you're busy men with no time for foolishness. Now I'm not so busy and very foolish, so I read detective stories. This is going to be a kind of backward detective story."

"All right," Groating said. "Go ahead."

"We've got a few clues. First, the Universe has ended through an attempt to pervade it with energy from hyperspace. Second, the attempt failed for a number of reasons which we can't discover yet. Third, the attempt was made in secrecy. Why?"

The controller said: "Why not? Scientists and all that—"

"I don't mean that kind of secrecy. These men were plainly outside the law, carrying on an illicit experiment. We must find out why energy experiments or atomic experiments were illegal. That will carry us back quite a few decades toward the present."

"But how?"

"Why, we trace the auxiliary cruiser, of course. If we can pick them up when they're purchasing supplies, we'll narrow our backward search considerably. Can you do it, Dr. Yarr?"

"It'll take time."

"Go ahead—we've got a thousand years."

It took exactly two days. In that time I learned a lot about the Prognosticator. They had it worked out beautifully. Seems the future is made up solely of probabilities. The Integrator could push down any one of these possible avenues, but with a wonderful check. The less probable the avenue of future was, the more off-focus it was. If a future event was only remotely possible, it was pictured as a blurred series of actions. On the other hand, the future that was almost positive in the light of present data, was sharply in focus.

When we went back to the Prog Building two days later, Yarr was almost alive in his excitement. He said, "I really think I've got just the thing you're looking for."

"What's that?"

"I've picked up an actual moment of bribery. It has additional data that should put us directly on the track."

We sat down behind the desk with Yarr at the controls. He had a slip of paper in his hand which he consulted with much muttering as he adjusted coordinates. Once more we saw the preliminary off-focus shadows, then the sound blooped on like a hundred stereo records playing at once. The crystal sharpened abruptly into focus.

The scream and roar of a gigantic foundry blasted our ears. On both sides of the scene towered the steel girder columns of the foundry walls, stretching deep into the background like the grim pillars of a satanic cathedral. Overhead cranes carried enormous blocks of metal with a ponderous gait. Smoke—black, white and fitfully flared with crimson from the furnaces, whirled around the tiny figures.

Two men stood before a gigantic casting. One, a foundryman in soiled overalls, made quick measurements which he called off to the other carefully checking a blueprint. Over the roar of the foundry the dialogue was curt and sharp:

"One hundred three point seven."

"Check."

"Short axis. Fifty-two point five."

"Check."

"Tangent on ovate diameter. Three degrees point oh five two."

"Check!"

"What specifications for outer convolutions?"

"Y equals cosine X."

"Then that equation resolves to X equals minus one half pi."

"Check."

The foundryman climbed down from the casting, folding his three-way gauge. He mopped his face with a bit of waste and eyed the engineer curiously as the latter carefully rolled up the blueprint and slid it into a tube of other rolled sheets. The foundryman said, "I think we did a nice job."

The engineer nodded.

"Only what in blazes do you want it for? Never saw a casting like that."

"I could explain, but you wouldn't understand. Too complicated."

The foundryman flushed. He said, "You theoretical guys are too damned snotty. Just because I know how to drop-forge doesn't mean I can't understand an equation."

"Mebbeso. Let it go at that. I'm ready to ship this casting out at once."

As the engineer turned to leave, rapping the rolled blueprints nervously against his calf, a great pig of iron that had been sailing up from the background swung dangerously toward his head. The foundryman cried out. He leaped forward, seized the engineer by the shoulder and sent him tumbling to the concrete floor. The blueprints went flying.

He pulled the engineer to his feet immediately and tried to straighten the dazed man who could only stare at the tons of iron that sailed serenely on. The foundryman picked up the scattered sheets and started to sort them. Abruptly he stopped and examined one of the pages closely. He began to look through the others, but before he could go any further, the blueprints were snatched from his hands.

He said, "What's this casting for?"

The engineer rolled the sheets together with quick, intense motions. He said, "None of your blasted business."

"I think I know. That's one-quarter a cyclotron. You're getting the other parts made up in different foundries, aren't you?"

There was no answer.

"Maybe you've forgotten Stabilization Rule 930."

"I haven't forgotten. You're crazy."

"Want me to call for official inspection?"

The engineer took a breath, then shrugged. He said, "I sup-

pose the only way to convince you is to show you the master drafts. Come on—"

They left the foundry and trudged across the broad concrete of a landing field to where the fat needle of the auxiliary ship lay. They mounted the ramp to the side port and entered the ship. Inside, the engineer called, "It's happened again, boys. Let's go!"

The port swung shut behind them. Spacemen drifted up from the surrounding corridors and rooms. They were rangy and tough-looking and the snub-nosed paralyzers glinted casually in their hands as though they'd been cleaning them and merely happened to bring them along. The foundryman looked around for a long time. At last he said, "So it's this way?"

"Yes, it's this way. Sorry."

"I'd like you to meet some of my friends, some day—"

"Perhaps we will."

"They'll have an easier time with you than you're gonna have with me!" He clenched fists and poised himself to spring.

The engineer said, "Hey—wait a minute. Don't lose your head. You did me a good turn back there. I'd like to return the favor. I've got more credit than I know what to do with."

The foundryman gave him a perplexed glance. He relaxed and began to rub his chin dubiously. He said, "Damn if this isn't a sociable ship. I feel friendlier already—"

The engineer grinned.

I called, "O.K., that's enough. Cut it," and the scene vanished.

"Well?" Yarr asked eagerly.

I said, "We're really in the groove now. Let's check back and locate the Stabilization debates on Rule 930." I turned to the C-S. "What's the latest rule number, sir?"

Groating said, "Seven fifteen."

The controller had already been figuring. He said, "Figuring the same law-production rate that would put Rule 930 about six hundred years from now. Is that right, Mr. Groating?"

The old man nodded and Yarr went back to his keyboard. I'm not going to bother you with what we all went through because a lot of it was very dull. For the benefit of the hermit from the moon I'll just mention that we hung around the Stability Library until we located the year S. R. 930 was

passed. Then we shifted to Stability headquarters and quick-timed through from January first until we picked up the debates on the rule.

The reasons for the rule were slightly bewildering on the one hand, and quite understandable on the other. It seems that in the one hundred and fifty years preceding, almost every Earthwide university had been blown up in the course of an atomic-energy experiment. The blowups were bewildering—the rule understandable. I'd like to tell you about that debate because—well, because things happened that touched me.

The Integrator selected a cool, smooth foyer in the Administration Building at Washington. It had a marble floor like milky ice flecked with gold. One side was broken by a vast square window studded with a thousand round-bottle panes that refracted the afternoon sunlight into showers of warm color. In the background were two enormous doors of synthetic oak. Before those doors stood a couple in earnest conversation—a nice-looking boy with a portfolio under his arm and a stunning girl. The kind with sleek-shingled head and one of those clean-cut faces that look fresh and wind-washed.

The controller said, "Why, that's the foyer to the Seminar Room. They haven't changed it at all in six hundred years."

Groating said, "Stability!" and chuckled.

Yarr said, "The debate is going on inside. I'll shift scene—"

"No—wait," I said. "Let's watch this for a while." I don't know why I wanted to—except that the girl made my pulse run a little faster and I felt like looking at her for a couple of years.

She was half crying. She said, "Then, if for no other reason—for my sake."

"For yours!" The boy looked harassed.

She nodded. "You'll sweep away his life work with a few words and a few sheets of paper."

"My own work, too."

"Oh, but won't you understand? You're young. I'm young. Youth loves to shatter the old idols. It feasts on the broken shards of destruction. It destroys the old ideas to make way for its own. But he's not young like us. He has only his past work to live on. If you shatter that, he'll have nothing left but a futile resentment. I'll be pent up with a broken old man who'll destroy me along with himself. Darling, I'm not saying you're wrong—I'm only asking you to wait a little."

She was crying openly now. The boy took her by the arm and led her to the crusted window. She turned her face away from the light—away from him. The boy said, "He was my teacher. I worship him. What I'm doing now may seem like treachery, but it's only treachery to his old age. I'm keeping faith with what he was thirty years ago—with the man who would have done the same thing to his teacher."

She cried, "But are you keeping faith with me? You, who will have all the joy of destroying and none of the tedious sweeping away the pieces. What of my life and all the weary years to come when I must coddle him and soothe him and lead him through the madness of forgetting what you've done to him?"

"You'll spend your life with me. I break no faith with you, Barbara."

She laughed bitterly. "How easily you evade reality. I shall spend my life with you—and in that short sentence, *poof!*"—she flicked her hand—"you dismiss everything. Where will he live? Alone? With us? Where?"

"That can be arranged."

"You're so stubborn, so pig-headed in your smug, righteous truth-seeking. Steven—for the very last time—please. Wait until he's gone. A few years, that's all. Leave him in peace. Leave us in peace."

He shook his head and started toward the oaken doors. "A few years waiting to salvage the pride of an old man, a few more catastrophes, a few more thousand lives lost—it doesn't add up."

She sagged against the window, silhouetted before the riot of color, and watched him cross to the doors. All the tears seemed drained out of her. She was so limp I thought she would fall to the floor at any instant. And then, as I watched her, I saw her stiffen and I realized that another figure had entered the foyer and was rushing toward the boy. It was an oldish man, bald and with an ageless face of carved ivory. He was tall and terribly thin. His eyes were little pits of embers.

He called, "Steven!"

The boy stopped and turned.

"Steven, I want to talk to you."

"It's no use, sir!"

"You're headstrong, Steven. You pit a few years' research against my work of a lifetime. Once I respected you. I

thought you would carry on for me as I've carried on for the generations that came before me."

"I am sir."

"You are not." The old man clutched at the boy's tunic and spoke intensely. "You betray all of us. You will cut short a line of research that promises the salvation of humanity. In five minutes you will wipe out five centuries of work. You owe it to those who slaved before us not to let their sweat go in vain."

The boy said, "I have a debt also to those who may die."

"You think too much of death, too little of life. What if a thousand more are killed—ten thousand—in the end it will be worth it."

"It will never be worth it. There will never be an end. The theory has always been wrong, faultily premised."

"You fool!" the old man cried. "You damned, blasted young fool. You can't go in there!"

"I'm going, sir. Let go."

"I won't let you go in."

The boy pulled his arm free and reached for the doorknob. The old man seized him again and yanked him off balance. The boy muttered angrily, set himself and thrust the old man back. There was a flailing blur of motion and a cry from the girl. She left the window, ran across the room and thrust herself between the two. And in that instant she screamed again and stepped back. The boy sagged gently to the floor, his mouth opened to an O of astonishment. He tried to speak and then relaxed. The girl dropped to her knees alongside him and tried to get his head on her lap. Then she stopped.

That was all. No shot or anything. I caught a glimpse of a metallic barrel in the old man's hand as he hovered frantically over the dead boy. He cried, "I only meant to—I—" and kept on whimpering.

After a while the girl turned her head as though it weighed a ton and looked up. Her face was suddenly frostbitten. In dull tones she said, "Go away, Father."

The old man said, "I only—" His lips continued to twitch, but he made no sound.

The girl picked up the portfolio and got to her feet. Without glancing again at her father, she opened the doors, stepped in and closed them behind her with a soft click. The debating voices broke off at the sight of her. She walked to the head of the table, set the portfolio down, opened it and

took out a sheaf of typescript. Then she looked at the amazed men who were seated around the table gaping at her.

She said, "I regret to inform the stabilizers that Mr. Steven Wilder has been unavoidably detained. As his fiancée and coworker, however, I have been delegated to carry on his mission and present his evidence to the committee—" She paused and went rigid, fighting for control.

One of the stabilizers said, "Thank you. Will you give your evidence, Miss . . . Miss?"

"Barbara Leeds."

"Thank you, Miss Leeds. Will you continue?"

With the gray ashes of a voice she went on. "We are heartily in favor of S. R. 930 prohibiting any further experimentation in atomic energy dynamics. All such experiments have been based on—almost inspired by the FitzJohn axioms and mathematics. The catastrophic detonations which have resulted must invariably result since the basic premises are incorrect. We shall prove that the backbone of FitzJohn's equations is entirely in error. I speak of

$$i = (b/a) \pi i e / \mu \dots$$

She glanced at the notes, hesitated for an instant, and then continued: "FitzJohn's errors are most easily pointed out if we consider the Leeds Derivations involving transfinite cardinals—"

The tragic voice droned on.

I said, "C-cut."

There was silence.

We sat there feeling bleak and cold, and for no reason at all, the icy sea-green opening bars of Debussy's "La Mer" ran through my head. I thought, "I'm proud to be a human—not because I think or I am, but because I can feel. Because humanity can reach out to us across centuries, from the past or future, from facts or imagination, and touch us—move us."

At last I said, "We're moving along real nice now."

No answer.

I tried again, "Evidently that secret experiment that destroyed existence was based on this FitzJohn's erroneous theory, eh?"

The C-S stirred and said, "What? Oh—Yes, Carmichael, quite right."

In low tones the controller said, "I wish it hadn't hap-

pened. He was a nice-looking youngster, that Wilder—promising.”

I said, “In the name of heaven, sir, it’s not going to happen if we pull ourselves together. If we can locate the very beginning and change it, he’ll probably marry the girl and live happily ever after.”

“Of course—” The controller was confused. “I hadn’t realized.

I said, “We’ve got to hunt back a lot more and locate this FitzJohn. He seems to be the key man in this puzzle.”

And how we searched. Boys, it was like working a four-dimensional jigsaw, the fourth dimension in this case being time. We located a hundred universities that maintained chairs and departments exclusively devoted to FitzJohn’s mathematics and theories. We slipped back a hundred years toward the present and found only fifty and in those fifty were studying the men whose pupils were to fill the chairs a century later.

Another century back and there were only a dozen universities that followed the FitzJohn theories. They filled the scientific literature with trenchant, belligerent articles on FitzJohn, and fought gory battles with his opponents. How we went through the libraries. How many shoulders we looked over. How many pages of equations we snap-photographed from the whirling octahedron for future reference. And finally we worked our way back to Bowdoin College, where FitzJohn himself had taught, where he worked out his revolutionary theories and where he made his first converts. We were on the home stretch.

FitzJohn was a fascinating man. Medium height, medium color, medium build—his body had the rare trick of perfect balance. No matter what he was doing, standing, sitting, walking, he was always exquisitely poised. He was like the sculptor’s idealization of the perfect man. FitzJohn never smiled. His face was cut and chiseled as though from a roughish sandstone; it had the noble dignity of an Egyptian carving. His voice was deep, unimpressive in quality, yet unforgettable for the queer, intense stresses it laid on his words. Altogether he was an enigmatic creature.

He was enigmatic for another reason, too, for although we traced his career at Bowdoin backward and forward for all its forty years, although we watched him teach the scores and scores of disciples who afterward went out into the scholastic

world to take up the fight for him—we could never trace FitzJohn back into his youth. It was impossible to pick him up at any point earlier than his first appearance on the physics staff of the college. It seemed as though he were deliberately concealing his identity.

Yarr raged with impotent fury. He said, "It's absolutely aggravating. Here we follow the chain back to less than a half century from today and we're blocked—" He picked up a small desk phone and called upstairs to the data floors. "Hullo, Cullen? Get me all available data on the name FitzJohn. FITZJOHN. What's the matter, you deaf? F-I-T-Z. . . . That's right. Be quick about it."

I said, "Seems as if FitzJohn didn't want people to know where he came from."

"Well," Yarr said pettishly, "that's impossible. I'll trace him backward, second by second, if I have to!"

I said, "That would take a little time, wouldn't it?"

"Yes."

"Maybe a couple of years?"

"What of it; You said we had a thousand."

"I didn't mean you to take me seriously, Dr. Yarr."

The small pneumatic at Yarr's desk whirled and clicked. Out popped a cartridge. Yarr opened it and withdrew a list of figures, and they were appalling. Something like two hundred thousand FitzJohns on the Earth alone. It would take a decade to check the entire series through the Integrator. Yarr threw the figures to the floor in disgust and swiveled around to face us.

"Well?" he asked.

I said, "Seems hopeless to check FitzJohn back second by second. At that rate we might just as well go through all the names on the list."

"What else is there to do?"

I said, "Look, the Prognosticator flirted twice with something interesting when we were conning FitzJohn's career. It was something mentioned all through the future, too."

"I don't recall—" the C-S began.

"It was a lecture, sir," I explained. "FitzJohn's first big lecture when he set out to refute criticism. I think we ought to pick that up and go through it with a fine comb. Something is bound to come out of it."

"Very well."

Images blurred across the spinning crystal as Yarr hunted

for the scene. I caught fuzzy fragments of a demolished Manhattan City with giant crablike creatures mashing helpless humans, their scarlet chiton glittering. Then an even blurrier series of images. A city of a single stupendous building towering like Babel into the heavens; a catastrophic fire roaring along the Atlantic seaboard; then a sylvan civilization of odd, naked creatures flitting from one giant flower to another. But they were all so far off focus they made my eyes ache. The sound was even worse.

Groating leaned toward me and whispered, "Merely vague possibilities—"

I nodded and then riveted my attention to the crystal, for it held a clear scene. Before us lay an amphitheater. It was modeled on the ancient Greek form, a horseshoe of gleaming whitestone terraces descending to a small square white rostrum. Behind the rostrum and surrounding the uppermost tiers of seats was a simple colonnade. The lovely and yet noble dignity was impressive.

The controller said, "Hel-lo, I don't recognize this."

"Plans are in the architectural offices," Groating said. "It isn't due for construction for another thirty years. We intend placing it at the north end of Central Park—"

It was difficult to hear them. The room was filled with the bellow and roar of shouting from the amphitheater. It was packed from pit to gallery with quick-jerking figures. They climbed across the terraces; they fought up and down the broad aisles; they stood on their seats and waved. Most of all they opened their mouths into gaping black blots and shouted. The hoarse sound rolled like slow, thunderous waves, and there was a faint rhythm struggling to emerge from the chaos.

A figure appeared from behind the columns, walked calmly up to the platform and began arranging cards on the small table. It was FitzJohn, icy and self-possessed, statuesque in his white tunic. He stood alongside the table, carefully sorting his notes, utterly oblivious of the redoubled roar that went up at his appearance. Out of that turmoil came the accented beats of a doggerel rhyme:

Neon
Crypton
Ammoniated
FitzJohn
Neon

Crypton
Ammoniated
FitzJohn

When he was finished, FitzJohn straightened and, resting the fingertips of his right hand lightly on top of the table, he gazed out at the rioting—unsmiling, motionless. The pandemonium was reaching unprecedented heights. As the chanting continued, costumed figures appeared on the terrace tops and began fighting down the aisles toward the platform. There were men wearing metal-tubed frameworks representing geometric figures. Cubes, spheres, rhomboids and tesseracts. They hopped and danced outlandishly.

Two young boys began unreeling a long streamer from a drum concealed behind the colonnade. It was of white silk and an endless equation was printed on it that read:

$$eia = 1 + ia - a2! + a3! - a4! \dots$$

and so on, yard after yard after yard. It didn't exactly make sense, but I understood it to be some kind of cutting reference to FitzJohn's equations.

There were hundreds of others, some surprising and many obscure. Lithe contortionists, made up to represent Möbius Strips, grasped ankles with their hands and went rolling down the aisles. A dozen girls appeared from nowhere, clad only in black net, representing giant Aleph-Nulls, and began an elaborate ballet. Great gas-filled balloons, shaped into weird topological manifolds were dragged in and bounced around.

It was utter insanity and utterly degrading to see how these mad college kids were turning FitzJohn's lecture into a Mardi Gras. They were college kids, of course, crazy youngsters who probably couldn't explain the binomial theorem, but nevertheless were giving their own form of expression to their teachers' antagonism to FitzJohn. I thought vaguely of the days centuries back when a thousand Harvard undergraduates did a very similar thing when Oscar Wilde came to lecture. Undergraduates whose entire reading probably consisted of the *Police Gazette*.

And all the while they danced and shouted and screamed, FitzJohn stood motionless, fingertips just touching the table, waiting for them to finish. You began with an admiration for his composure. Then suddenly you realized what a breathtaking performance was going on. You glued your eyes to the

motionless figure and waited for it to move—and it never did.

What?

You don't think that was so terrific, eh? Well, one of you get up and try it. Stand alongside a table and rest your fingertips lightly on the top—not firmly enough to bear the weight of your arm—but just enough to make contact. Maybe it sounds simple. Just go ahead and try it. I'll bet every credit I ever own no one of you can stand there without moving for sixty seconds. Any takers? I thought not. You begin to get the idea, eh?

They began to get the same idea in the amphitheater. At first the excitement died down out of shame. There's not much fun making a holy show of yourself if your audience doesn't react. They started it up again purely out of defiance, but it didn't last long. The chanting died away, the dancers stopped cavorting, and at last that entire audience of thousands stood silent, uneasily watching FitzJohn. He never moved a muscle.

After what seemed like hours of trying to outstare him, the kids suddenly gave in. Spatters of applause broke out across the terraces. The clapping was taken up and it rose to a thunder of beating palms. No one is as quick to appreciate a great performance as a youngster. These kids sat down in their seats and applauded like mad. FitzJohn never moved until the applause, too, had died down, then he picked up his card and, without preamble—as though nothing at all had happened—he began his lecture.

"Ladies and gentlemen, I have been accused of creating my theory of energy-dynamics and my mathematics out of nothing—and my critics cry: 'From nothing comes nothing.' Let me remind you first that man does not create in the sense of inventing what never existed before. Man only discovers. The things we seem to invent, no matter how novel and revolutionary, we merely discover. They have been waiting for us all the time.

"Moreover, I was not the sole discoverer of this theory. No scientist is a lone adventurer, striking out into new fields for himself. The way is always led by those who precede us, and we who seem to discover all, actually do no more than add our bit to an accumulated knowledge.

"To show you how small my own contribution was and how much I inherited from the past, let me tell you that the

basic equation of my theory is not even my own. It was discovered some fifty years prior to this day—some ten years before I was born.

“For on the evening of February 2, 2909, in Central Park, on the very site of this amphitheater, my father, suddenly struck with an idea, mentioned an equation to my mother. That equation:

$$i=(b/a) \pi i e/\mu \dots$$

was the inspiration for my own theory. So you can understand just how little I have contributed to the ‘invention’ of The Tension Energy-Dynamics Equations—”

FitzJohn glanced at the first card and went on: “Let us consider, now, the possible permutations on the factor $e/\mu \dots$ ”

I yelled, “That’s plenty. Cut!” and before the first word was out of my mouth the controller and the C-S were shouting, too. Yarr blanked out the crystal and brought up the lights. We were all on our feet, looking at each other excitedly. Yarr jumped up so fast his chair went over backward with a crash. We were in a fever because, boys, that day happened to be February 9, 2909, and we had just about two hours until evening.

The controller said, “Can we locate these FitzJohns?”

“In two hours? Don’t be silly. We don’t even know if they’re named FitzJohn today.”

“Why not?”

“They may have changed their name—it’s getting to be a fad nowadays. The son may have changed his name as a part of that cover-up of his past. Heaven only knows why not—”

“But we’ve got to split them up—whoever they are.”

The C-S said, “Take hold of yourself. How are we going to separate eleven million married people? Didn’t you ever hear of Stability?”

“Can’t we publish a warning and order everybody out of the park?”

“And let everybody know about the Prog Building?” I said. “You keep forgetting Stability.”

“Stability be damned! We can’t let them have that conversation—and if they do anyway, we can’t let them have that boy!”

Groating was really angry. He said, “You’d better go home

and read through the Credo. Even if it meant the salvation of the Universe I would not break up a marriage—nor would I harm the boy.”

“Then what do we do?”

“Have patience. We’ll think of something.”

I said, “Excuse me, sir—I’ve got an idea.”

“Forget ideas,” the controller yelled, “we need action.”

“This is action.”

The C-S said, “Go ahead, Carmichael.”

“Well, obviously the important thing is to keep all married couples out of the north sector of Central Park tonight. Suppose we get a special detail of police together at once. Then we beat through the park and get everyone out. We can quarantine it—set up a close cordon around the park and guard it all night.”

The controller yelled, “It may be one of the policemen.”

“Okay, then we pick the unmarried ones. Furthermore, we give strict orders that all women are to stay away.”

The C-S said, “It might work—it’ll have to work. We can’t let that conversation take place.”

I said, “Excuse me, sir, do you happen to be married?”

He grinned. “My wife’s in Washington. I’ll tell her to stay there.”

“And the controller, sir?”

The controller said, “She’ll stay home. What about yourself?”

“Me? Strictly bachelor.”

Groating laughed. “Unfortunate, but excellent for tonight. Come, let’s hurry.”

We took the pneumatic to headquarters and let me tell you, stuff began to fly, but high! Before we were there ten minutes, three companies were reported ready for duty. It seemed to satisfy the controller, but it didn’t satisfy me. I said, “Three’s not enough. Make it five.”

“Five hundred men? You’re mad.”

I said, “I wish it could be five thousand. Look, we’ve knocked our brains out digging through a thousand years for this clue. Now that we’ve got it I don’t want us to muff the chance.”

The C-S said, “Make it five.”

“But I don’t think we’ve got that many unmarried men in the service.”

“Then get all you can. Get enough so they can stand close

together in the cordon—close enough so no one can wander through. Look—this isn't a case of us hunting down a crook who knows we're after him. We're trying to pick up a couple who are perfectly innocent—who may wander through the cordon. We're trying to prevent an accident, not a crime."

They got four hundred and ten all told. The whole little regiment was mustered before headquarters and the C-S made a beautifully concocted speech about a criminal and a crime that had to be prevented and hoopsgadoopus, I forget most of it. Naturally we couldn't let them know about the Prog Building any more than we could the citizens—and I suppose you understand why the secret had to be kept.

You don't, eh? Well, for the benefit of the hermit from the moon I'll explain that, aside from the important matter of Stability, there's the very human fact that the Prog would be besieged by a million people a day looking for fortune-telling and hot tips on the races. Most important of all, there's the question of death. You can't let a man know when and how he's going to die. You just can't.

There wasn't any sense keeping the news from the papers because everyone around Central Park was going to know something was up. While the C-S was giving instructions, I slipped into a booth and asked for multidial. When most of the reporters' faces were on segments of the screen, I said, "Greetings, friendlies!"

They all yelled indignantly because I'd been out of sight for three days.

I said, "No more ho-hum, lads. Carmichael sees all and tells all. Hot-foot it up to the north end of Central Park in an hour or so. Big stuff!"

The *Journal* said, "Take you three days to find that out?"

"Yep."

The *Post* said, "Can it, Carmichael. The last time you sent us north, the south end of the Battery collapsed."

"This is no gag. I'm giving it to you straight."

"Yeah?" The *Post* was belligerent. "I say Gowan!"

"Gowan yourself," The *Ledger* said. "This side of the opposition is credible."

"You mean gullible."

I said, "The word this time is sensational. Four hundred police on the march. Tramp-tramp-tramp—the beat of the drum—boots—et cetera. Better get moving if you want to tag along."

The *News* gave me a nasty smile and said, "Brother, for

your sake it better be good—because I'm preparing a little sensation of my own to hand over."

I said, "Make it a quick double cross, Newsy. I'm in a hurry," and I clicked off. It's funny how sometimes you can't get along with wrong people.

You know how fast night comes on in February. The blackness gathers in the sky like a bunched cape. Then someone lets it drop and it sinks down over you with swiftly spreading black folds. Those dusky folds were just spreading out toward the corners of the sky when we got to the park. The cops didn't even bother to park their helios. They vaulted out and left them blocking the streets. In less than half a minute, two hundred were beating through the park in a long line, driving everyone out. The rest were forming the skeleton of the cordon.

It took an hour to make sure the park was clear. Somehow, if you tell a hundred citizens to do something, there will always be twenty who'll fight you—not because they really object to doing what they're told, but just out of principle or curiosity or cantankerousness.

The all-clear came at six o'clock, and it was just in time because it was pitch dark. The controller, the C-S and myself stood before the high iron gates that open onto the path leading into the rock gardens. Where we stood we could see the jet masses of foliage standing crisp and still in the chill night. To either side of us stretched the long, wavering lines of police glow lamps. We could see the ring of bright dots drawn around the entire north end of the park like a necklace of glowing pearls.

The silence and the chill waiting was agonizing. Suddenly I said: "Excuse me, sir, but did you tell the police captain to okay the reporters?"

The C-S said, "I did, Carmichael—" and that was all. It wasn't so good because I'd hoped we'd have a little talk to ease the tension.

Again there was nothing but the cold night and the waiting. The stars overhead were like bits of radium and so beautiful you wished they were candy so you could eat them. I tried to imagine them slowly blotted out, and I couldn't. It's impossible to visualize the destruction of any lovely thing. Then I tried counting the police lamps around the park. I gave that up before I reached twenty.

At last I said, "Couldn't we go in and walk around a bit, sir?"

The C-S said, "I don't see why not—"

So we started through the gate, but we hadn't walked three steps into the park when there was a shout behind us and the sharp sounds of running feet.

But it was only old Yarr running up to us with a couple of cops following him. Yarr looked like a banshee with his coat flying and an enormous muffler streaming from his neck. He dressed real old-fashioned. He was all out of breath and just gasped while the C-S told the cops it was all right.

Yarr panted: "I . . . I—"

"Don't worry, Dr. Yarr, everything is safe so far."

Yarr took an enormous breath, held it for a moment and then let it out with a *woosh*. In natural tones he said, "I wanted to ask you if you'd hold on to the couple. I'd like to examine them for a check on the Prognosticator."

Gently, the C-S explained, "We're not trying to catch them, Dr. Yarr. We don't know who they are and we may never know. All we want to do is to prevent this conversation."

So we forgot about taking a walk through the gardens and there was more cold and more silence and more waiting. I clasped my hands together and I was so chilled and nervous it felt like I had ice water between the palms. A quick streak of red slanted up through the sky, the rocket discharges of the Lunar Transport, and ten seconds later I heard the *wham* of the takeoff echoing from Governor's Island and the follow-up drone. Only that drone kept on sounding long after it should have died away and it was too thin—too small—

I looked up, startled, and there was a helio making lazy circles over the center of the rock gardens. Its silhouette showed clearly against the stars and I could see the bright squares of cabin windows. Suddenly I realized there was a stretch of lawn in the center of the gardens where a helio could land—where a couple could get out to stretch their legs and take an evening stroll.

I didn't want to act scared, so I just said, "I think we'd better go inside and get that helio out of there."

So we entered the gate and walked briskly toward the gardens, the two cops right at our heels. I managed to keep on walking for about ten steps and then I lost all control. I broke into a run and the others ran right behind me—the

controller, the C-S, Yarr and the cops. We went pelting down the gravel path, circled a dry fountain and climbed a flight of steps three at a clip.

The helio was just landing when I got to the edge of the lawn. I yelled, "Keep off! Get out of here!" and started toward them across the frozen turf. My feet pounded, but not much louder than my heart. I guess the whole six of us must have sounded like a herd of buffalo. I was still fifty yards off when dark figures started climbing out of the cabin. I yelled, "Didn't you hear me? Get out of this park!"

And then the *Post* called, "That you, Carmichael? What goes on?"

Sure—it was the press.

So I stopped running and the others stopped and I turned to the C-S and said, "Sorry about the false alarm, sir. What shall I do with the reporters—have them fly out or can they stay? They think this is a crime hunt."

Groating was a little short of breath. He said, "Let them stay, Carmichael, they can help us look for Dr. Yarr. He seems to have lost himself somewhere in the woods."

I said, "Yes, sir," and walked up to the helio.

The cabin door was open and warm amber light spilled out into the blackness. All the boys were out by this time, getting into their coveralls and stamping around and making the usual newspaper chatter. As I came up, the *Post* said, "We brung your opposition along, Carmichael—Hogan of the *Trib*."

The *News* said, "Now's as good a time as any for the wrasslin' match, eh? You been in training, Carmichael?" His voice had a nasty snigger to it and I thought, *Oh-ho, this Hogan probably scales two twenty and he'll mop me up, but very good—to the great satisfaction, no doubt, of my confrere from the News.*

Only when they shoved Hogan forward, he wasn't so big, so I thought, *At a time like this—let's get it over with fast.* I took a little spring through the dark and grabbed Hogan around the chest and dumped him to the ground.

I said, "Okay, opposition, that's—"

Suddenly I realized this Hogan'd been soft—soft but firm, if you get me. I looked down at her, full of astonishment and she looked up at me, full of indignation, and the rest of the crowd roared with laughter.

I said, "I'll be a pie-eyed emu."

And then, my friends, six dozen catastrophes and cata-

clysms and volcanoes and hurricanes and everything else hit me. The C-S began shouting and then the controller and after a moment, the cops. Only by that time the four of them were on top of me and all over me, so to speak. Little Yarr came tearing up, screaming at Groating and Groating yelled back and Yarr tried to bash my head in with his little fists. They yanked me to my feet and marched me off while the reporters and this Halley Hogan girl stared. I can't tell you much about what happened after that—the debating and the discussing and the interminable sound and fury, because most of the time I was busy being locked up. All I can tell you is that I was it. Me. I. I was the one man we were trying to stop. I—innocent me. I was X, the mad scientist and Y, the ruthless dictator and Z, the alien planet—all rolled into one. I was the one guy the Earth was looking to stop.

Sure—because you see if you twist “I’ll be a pie-eyed emu” enough, you get FitzJohn’s equation:

$$i = (b/a) \pi i e / \mu \dots” ,$$

I don’t know how my future son is going to figure I was talking mathematics. I guess it’ll just be another one of those incidents that turned into legend and get pretty well changed in the process. I mean the way an infant will “goo” and by the time his pop gets finished telling it it’s become the Preamble to the Credo.

What?

No, I’m not married—yet. In fact, that’s why I’m stationed up here editing a two-sheet weekly on this God-forsaken asteroid. Old Groating, he calls it protective promotion. Well, sure, it’s a better job than reporting. The C-S said they wouldn’t have broken up an existing marriage, but he was going to keep us apart until they can work something out on the Prognosticator.

No—I never saw her again after that time I dumped her on the turf, but, boy, I sure want to. I only got a quick look, but she reminded me of that Barbara Leeds girl, six hundred years from now. That lovely kind with shingled hair and a clean-cut face that looks fresh and wind-washed—

I keep thinking about her and I keep thinking how easy it would be to stow out of here on an Earth-bound freighter—change my name—get a different kind of job. To hell with Groating and to hell with Stability and to hell with a thousand years from now. I’ve to see her again—soon.

I keep thinking how I’ve got to see her again.

ASYLUM

Astounding,

May

by A. E. van Vogt

One of the most interesting continuing themes in modern science fiction involves guardianship—the concept that the human species needs to be watched, observed, controlled and/or prepared until such time as we are “fit” for contact with other life forms or until other life forms are “fit” to meet us. “Asylum” is one of the finest early examples of this kind of story, this time combining the theme with vampirism, and for good measure, throwing in some very interesting observations on the nature of comparative intelligence.

(I have always found it interesting that in science fiction tales, organisms of super-human intelligence are so often portrayed as cold and cruel. It is, I suppose, an offshoot of the “mad scientist” theme and the feeling that intelligence, *per se*, is evil. I’m not really astonished that such a feeling should arise. If you were to observe someone know something you did not and use that knowledge to do something you could not—fix an automobile, for instance—you might not enjoy the feeling of inferiority it engendered, or the feeling of helpless dependence. You might hug to your chest the feeling that ignorance is really better and that uniformed people make up for it by being nicer. But why do science fiction writers so often spread that idea when they themselves are generally so intelligent? I wonder.—I.A.)

I

Indecision was dark in the man’s thoughts as he walked across the spaceship control room to the cot where the woman lay so taut and so still. He bent over her; he said in his deep voice, “We’re slowing down, Merla.”

No answer, no movement, not a quiver in her delicate, abnormally blanched cheeks. Her fine nostrils dilated ever so slightly with each measured breath. That was all.

The Dreegh lifted her arm, then let it go. It dropped to her lap like a piece of lifeless wood, and her body remained rigid and unnatural. Carefully, he put his fingers to one eye, raised the lid, peered into it. It stared back at him, a clouded, sightless blue.

He straightened, and stood very still there in the utter silence of the hurtling ship. For a moment, then, in the intensity of his posture and in the dark ruthlessness of his lean, hard features, he seemed the veritable embodiment of grim, icy calculation.

He thought grayly, *If I revived her now, she'd have more time to attack me, and more strength. If I waited, she'd be weaker—*

Slowly, he relaxed. Some of the weariness of the years he and this woman had spent together in the dark vastness of space came to shatter her abnormal logic. Bleak sympathy touched him—and the decision was made.

He prepared an injection, and fed it into her arm. His gray eyes held a steely brightness as he put his lips near the woman's ear; in a ringing, resonant voice he said, "We're near a star system. There'll be blood, Merla! And life!"

The woman stirred; momentarily, she seemed like a golden-haired doll come alive. No color touched her perfectly formed cheeks, but alertness crept into her eyes. She stared up at him with a hardening hostility, half questioning.

"I've been chemical," she said—and abruptly the doll-like effect was gone. Her gaze tightened on him, and some of the prettiness vanished from her face. Her lips twisted into words: "It's damned funny, Jeel, that you're still O.K. If I thought—"

He was cold, watchful. "Forget it," he said curtly. "You're an energy waster, and you know it. Anyway, we're going to land."

The flame-like tenseness of her faded. She sat up painfully, but there was a thoughtful look on her face as she said, "I'm interested in the risks. This is not a Galactic planet, is it?"

"There are no Galactics out here. But there is an Observer. I've been catching the secret *ultra* signals for the last two hours"—a sardonic note entered his voice—"warning all ships to stay clear because the system isn't ready for any kind of contact with Galactic planets."

Some of the diabolic glee that was in his thoughts must have communicated through his tone. The woman stared at him, and slowly her eyes widened. She half whispered, "You mean—"

He shrugged. "The signals ought to be registering full blast now. We'll see what degree system this is. But you can start hoping hard right now."

At the control board, he cautiously manipulated the room into darkness and set the automatics—a picture took form on a screen on the opposite wall.

At first there was only a point of light in the middle of a starry sky, then a planet floating brightly in the dark space, continents and oceans plainly visible. A voice came out of the screen:

"This star system contains one inhabited planet, the third from the sun, called Earth by its inhabitants. It was colonized by Galactics about seven thousand years ago in the usual manner. It is now in the third degree of development, having attained a limited form of space travel little more than a hundred years ago. It—"

With a swift movement, the man cut off the picture and turned on the light, then looked across at the woman in a blank, triumphant silence.

"Third degree!" he said softly, and there was an almost incredulous note in his voice. "Only third degree. Merla, do you realize what this means? This is the opportunity of the ages. I'm going to call the Dreegh tribe. If we can't get away with several tankers of blood and a whole battery of 'life,' we don't deserve to be immortal. We—"

He turned toward the communicator, and for that exultant moment caution was a dim thing in the back of his mind. From the corner of his eye, he saw the woman flow from the edge of the cot. Too late he twisted aside. The frantic jerk saved him only partially; it was their cheeks, not their lips that met.

Blue flame flashed from him to her. The burning energy seared his cheek to instant, bleeding rawness. He half fell to the floor from the shock; and then, furious with the intense agony, he fought free.

"I'll break your bones!" he raged.

Her laughter, unlovely with her own suppressed fury, floated up at him from the floor, where he had flung her. She

snarled, "So you did have a secret supply of 'life' for yourself. You damned double-crosser!"

His black mortification dimmed before the stark realization that anger was useless. Tense with the weakness that was already a weight on his muscles, he whirled toward the control board, and began feverishly to make the adjustments that would pull the ship back into normal space and time.

The body urge grew in him swiftly, a dark, remorseless need. Twice, black nausea sent him reeling to the cot; but each time he fought back to the control board. He sat there finally at the controls, head drooping, conscious of the numbing tautness that crept deeper, deeper—

Almost, he drove the ship too fast. It turned a blazing white when at last it struck the atmosphere of the third planet. But those hard metals held their shape; and the terrible speeds yielded to the fury of the reversers and to the pressure of the air that thickened with every receding mile.

It was the woman who helped his faltering form into the tiny lifeboat. He lay there, gathering strength, staring with tense eagerness down at the blazing sea of lights that was the first city he had seen on the night side of this strange world.

Dully, he watched as the woman carefully eased the small ship into the darkness behind a shed in a little back alley; and, because succor seemed suddenly near, sheer hope enabled him to walk beside her to the dimly lighted residential street nearby.

He would have walked on blankly into the street, but the woman's fingers held him back into the shadows of the alleyway.

"Are you mad?" she whispered. "Lie down. We'll stay right here till someone comes."

The cement was hard beneath his body, but after a moment of the painful rest it brought, he felt a faint surge of energy; and he was able to voice his bitter thought: "If you hadn't stolen most of my carefully saved 'life,' we wouldn't be in this desperate position. You know well that it's more important that I remain at full power."

In the dark beside him, the woman lay quiet for a while; then her defiant whisper came: "We both need a change of blood and a new charge of 'life.' Perhaps I did take a little too much out of you, but that was because I had to steal it. You wouldn't have given it to me of your own free will, and you know it."

For a time, the futility of argument held him silent, but, as the minutes dragged, that dreadful physical urgency once more tainted his thoughts, he said heavily, "You realize of course that we've revealed our presence. We should have waited for the others to come. There's no doubt at all that our ship was spotted by the Galactic Observer in this system before we reached the outer planets. They'll have tracers on us wherever we go, and, no matter where we bury our machine, they'll know its exact location. It is impossible to hide the interstellar drive energies; and, since they wouldn't make the mistake of bringing such energies to a third-degree planet, we can't hope to locate them in that fashion.

"But we must expect an attack of some kind. I only hope one of the great Galactics doesn't take part in it."

"One of *them*!" Her whisper was a gasp, then she snapped irritably, "Don't try to scare me. You've told me time and again that—"

"All right, all right!" He spoke grudgingly, wearily. "A million years have proven that they consider us beneath their personal attention. And"—in spite of his appalling weakness, scorn came—"let any of the kind of agents they have in these lower category planets try to stop us."

"Hush!" Her whisper was tense. "Footsteps! Quick, get to your feet!"

He was aware of the shadowed form of her rising; then her hands were tugging at him. Dizzily, he stood up.

"I don't think," he began wanly, "that I can—"

"Jeel!" Her whisper beat at him; her hands shook him. "It's a man and a woman. They're 'life,' Jeel, 'life!'"

Life!

He straightened with a terrible effort. A spark of the unquenchable will to live that had brought him across the black miles and the blacker years burst into flames inside him. Lightly, swiftly, he fell into step beside Merla, and strode beside her into the open. He saw the shapes of the man and the woman.

In the half-night under the trees of that street, the couple came toward them, drawing aside to let them pass; first the woman came, then the man—and it was as simple as if all his strength had been there in his muscles.

He saw Merla launch herself at the man; and then he was grabbing the woman, his head bending instantly for that abnormal kiss—

Afterward—after they had taken the blood, too—grimness came to the man, a hard fabric of thought and counter-thought, that slowly formed into purpose; he said: "We'll leave the bodies here."

Her startled whisper rose in objection, but he cut her short harshly: "Let me handle this. These dead bodies will draw to this city news gatherers, news reporters or whatever their breed are called on this planet; and we need such a person now. Somewhere in the reservoir of facts possessed by a person of this type must be clues, meaningless to him, but by which we can discover the secret base of the Galactic Observer in this system. We must find that base, discover its strength and destroy it if necessary when the tribe comes."

His voice took on a steely note: "And now we've got to explore this city, find a much frequented building, under which we can bury our ship, learn the language, replenish our own vital supplies—and capture that reporter."

"After I'm through with him"—his tone became silk smooth—"he will undoubtedly provide you with that physical diversion which you apparently crave when you have been particularly chemical."

He laughed gently, as her fingers gripped his arm in the darkness, a convulsive gesture; her voice came: "Thank you, Jeel, you do understand, don't you?"

II

Behind Leigh, a door opened. Instantly the clatter of voices in the room faded to a murmur. He turned alertly, tossing his cigarette onto the marble floor, and stepping on it, all in one motion.

Overhead, the lights brightened to daylight intensity; and in that blaze he saw what the other eyes were already staring at: the two bodies, the man's and the woman's, as they were wheeled in.

The dead couple lay side by side on the flat, gleaming top of the carrier. Their bodies were rigid, their eyes closed; they looked as dead as they were, and not at all, Leigh thought, as if they were sleeping.

He caught himself making a mental note of that fact—and felt abruptly shocked.

The first murders on the North American continent in

twenty-seven years. And it was only another job. By Heaven, he was tougher than he'd ever believed.

He grew aware that the voices had stopped completely. The only sound was the hoarse breathing of the man nearest him—and then the scrape of his own shoes as he went forward.

His movement acted like a signal on that tense group of men. There was a general pressing forward. Leigh had a moment of hard anxiety; and then his bigger, harder muscles brought him where he wanted to be, opposite the two heads.

He leaned forward in dark absorption. His fingers probed gingerly the neck of the woman, where the incisions showed. He did not look up at the attendant, as he said softly, "This is where the blood was drained?"

"Yes."

Before he could speak again, another reporter interjected: "Any special comment from the police scientists? The murders are more than a day old now. There ought to be something new."

Leigh scarcely heard. The woman's body, electrically warmed for embalming, felt eerily lifelike to his touch. It was only after a long moment that he noticed her lips were badly, almost brutally bruised.

His gaze flicked to the man; and there were the same neck cuts, the same torn lips. He looked up, questions quivered on his tongue—and remained unspoken as realization came that the calm-voiced attendant was still talking. The man was saying, "—normally, when the electric embalmers are applied, there is resistance from the static electricity of the body. Curiously, that resistance was not present in either body."

Somebody said, "Just what does that mean?"

"This static force is actually a form of life force, which usually trickles out of a corpse over a period of a month. We know of no way to hasten the process, but the bruises on the lips show distinct burns, which are suggestive."

There was a craning of necks, a crowding forward; and Leigh allowed himself to be pushed aside. He stopped attentively, as the attendant said, "Presumably, a pervert could have kissed with such violence."

"I thought," Leigh called distinctly, "there were no more perverts since Professor Ungarn persuaded the government to institute his brand of mechanical psychology in all schools, thus ending murder, theft, war and all unsocial perversions."

The attendant in his black frock coat hesitated; then: "A very bad one seems to have been missed."

He finished: "That's all, gentlemen. No clues, no promise of an early capture and only this final fact: We've wirelessly Professor Ungarn and, by great good fortune, we caught him on his way to Earth from his meteorite retreat near Jupiter. He'll be landing shortly after dark, in a few hours now."

The lights dimmed. As Leigh stood frowning, watching the bodies being wheeled out, a phrase floated out of the gathering chorus of voices:

"—The kiss of death—"

"I tell you," another voice said, "the captain of this space liner swears it happened—the spaceship came past him at a million miles an hour, and it was slowing down, get that, slowing down—two days ago."

"—The vampire case! That's what I'm going to call it—"

That's what Leigh called it, too, as he talked briefly into his wrist communicator. He finished: "I'm going to supper now, Jim."

"Okay, Bill." The local editor's voice came metallically. "And say, I'm supposed to commend you. Nine thousand papers took the Planetarian Service on this story, as compared with about forty-seven hundred who bought from Universal, who got the second largest coverage."

"And I think you've got the right angle for today also. Husband and wife, ordinary young couple, taking an evening's walk. Some devil hauls up alongside them, drains their blood into a tank, their life energy onto a wire or something—people will believe that, I guess. Anyway, you suggest it could happen to anybody; so be careful, folks. And you warn that, in these days of interplanetary speeds, he could be anywhere tonight for his next murder."

"As I said before, good stuff. That'll keep the story frying hard for tonight. Oh, by the way—"

"Shoot!"

"A kid called half an hour ago to see you. Said you expected him."

"A kid?" Leigh frowned.

"Name of Patrick. High school age, about sixteen. No, come to think of it, that was only my first impression. Eighteen, maybe twenty, very bright, confident, proud."

"I remember now," said Leigh. "College student. Interview for a college paper. Called me up this afternoon. One of

those damned persuasive talkers. Before I knew it, I was signed up for supper at Constantine's."

"That's right. I was supposed to remind you. O.K.?"

Leigh shrugged. "I promised," he said.

Actually, as he went out into the blaze of late afternoon, sunlit street, there was not a thought in his head. Nor a premonition.

Around him, the swarm of humankind began to thicken. Vast buildings discharged the first surge of the five o'clock tidal wave—and twice Leigh felt the tug at his arm before it struck him that someone was not just bumping him.

He turned, and stared down at a pair of dark, eager eyes set in a brown, wizened face. The little man waved a sheaf of papers at him. Leigh caught a glimpse of writing in longhand on the papers. Then the fellow was babbling:

"Mr. Leigh, hundred dollars for these . . . biggest story—"

"Oh," said Leigh. His interest collapsed; then his mind roused itself from its almost blank state, and pure politeness made him say, "Take it up to the Planetarian office. Jim Brian will pay you what the story is worth."

He walked on, the vague conviction in his mind that the matter was settled. Then, abruptly, there was the tugging at his arm again.

"Scoop!" the little man was muttering. "Professor Ungarn's log, all about a spaceship that came from the stars. Devils in it who drink blood and kiss people to death!"

"See here!" Leigh began, irritated; and then he stopped physically and mentally. A strange ugly chill swept through him. He stood there, swaying a little from the shock of the thought that was frozen in his brain:

The newspapers with those details of "blood" and "kiss" were not on the street yet, wouldn't be for another five minutes. . . .

The man was saying, "Look, it's got Professor Ungarn's name printed in gold on the top of each sheet, and it's all about how he first spotted the ship eighteen light years out, and how it came all that distance in a few hours . . . and he knows where it is now and—"

Leigh heard, but that was all. His reporter's brain, that special, highly developed department, was whirling with a little swarm of thoughts that suddenly straightened into a hard, bright pattern; and in that tightly built design, there

was no room for any such brazen coincidence as this man coming to him here in this crowded street.

He said, "Let me see those!" And reached as he spoke.

The papers came free from the other's fingers into his hands, but Leigh did not even glance at them. His brain was crystal-clear, his eyes cold; he snapped: "I don't know what game you're trying to pull. I want to know three things, and make your answers damned fast! One: How did you pick me out, name and job and all, here in this packed street of a city I haven't been in for a year?"

He was vaguely aware of the little man trying to speak, stammering incomprehensible words. But he paid no attention. Remorselessly, he pounded on:

"Two: Professor Ungarn is arriving from Jupiter in three hours. How do you explain your possession of papers he must have written, less than two days ago?"

"Look, boss," the man chattered, "you've got me all wrong—"

"My third question," Leigh said grimly, "is how are you going to explain to the police your pre-knowledge of the details of—murder?"

"Huh!" The little man's eyes were glassy, and for the first time pity came to Leigh. He said almost softly, "All right, fellah, start talking."

The words came swiftly, and at first they were simply senseless sounds; only gradually did coherence come.

"—And that's the way it was, boss. I'm standing there, and this kid comes up to me and points you out, and gives me five bucks and those papers you've got, and tells me what I'm supposed to say to you and—"

"Kid!" said Leigh; and the first shock was already in him.

"Yeah, kid about sixteen; no, more like eighteen or twenty . . . and he gives me the papers and—"

"This kid," said Leigh, "would you say he was of college age?"

"That's it, boss; you've got it. That's just what he was. You know him, eh? O.K., that leaves me in the clear, and I'll be going—"

"Wait!" Leigh called, but the little man seemed suddenly to realize that he need only run, for he jerked into a mad pace; and people stared, and that was all. He vanished around a corner, and was gone forever.

Leigh stood, frowning, reading the thin sheaf of papers.

And there was nothing beyond what the little man had already conveyed by his incoherent word of mouth, simply a vague series of entries on sheets from a loose-leaf notebook.

Written down, the tale about the spaceship and its occupants lacked depth, and seemed more unconvincing each passing second. True, there was the single word "Ungarn" inscribed in gold on the top of each sheet but—

Leigh shook himself. The sense of silly hoax grew so violently that he thought with abrupt anger: *If that damned fool college kid really pulled a stunt like—*

The thought ended; for the idea was as senseless as everything that had happened.

And still there was no real tension in him. He was only going to a restaurant.

He turned into the splendid foyer that was the beginning of the vast and wonderful Constantine's. In the great doorway, he paused for a moment to survey the expansive glitter of tables, the hanging garden tearooms; and it was all there.

Brilliant Constantine's famous the world over—but not much changed from his last visit.

Leigh gave his name, and began: "A Mr. Patrick made reservations, I understand—"

The girl cut him short. "Oh, yes, Mr. Leigh. Mr. Patrick reserved Private 3 for you. He just now phoned to say he'd be along in a few minutes. Our premier will escort you."

Leigh was turning away, a vague puzzled thought in his mind at the way the girl had gushed, when a flamelike thought struck him: "Just a minute, did you say *Private 3*? Who's paying for this?"

The girl glowed at him: "It was paid by phone. Forty-five hundred dollars!"

Leigh stood very still. In a single, flashing moment, this meeting that, even after what had happened on the street, had seemed scarcely more than an irritation to be gotten over with, was become a fantastic, abnormal thing.

Forty-five—hundred—dollars! Could it be some damned fool rich kid sent by a college paper, but who had pulled this whole affair because he was determined to make a strong, personal impression?

Coldly, alertly, his brain rejected the solution. Humanity produced egoists on an elephantastic scale, but not one who would order a feast like that to impress a reporter.

His eyes narrowed on an idea. "Where's your registered phone?" he asked curtly.

A minute later, he was saying into the mouthpiece: "Is that the Amalgamated Universities Secretariat? . . . I want to find out if there is a Mr. Patrick registered at any of your local colleges, and, if there is, whether or not he has been authorized by any college paper to interview William Leigh of the Planetarian News Service. This is Leigh calling."

It took six minutes, and then the answer came, brisk, tremendous and final: "There are three Mr. Patricks in our seventeen units. All are at present having supper at their various official residences. There are four Miss Patricks similarly accounted for by our staff of secretaries. None of these seven is in any way connected with a university paper. Do you wish any assistance in dealing with the impostor?"

Leigh hesitated; and when he finally spoke, it was with the queer, dark realization that he was committing himself. "No," he said, and hung up.

He came out of the phone box, shaken by his own thoughts. There was only one reason why he was in this city at this time. Murder! And he knew scarcely a soul. Therefore—

It was absolutely incredible that any stranger would want to see him for a reason not connected with his own purpose. He shook the ugly thrill out of his system; he said, "To Private 3, please—"

Tensed but cool, he examined the apartment that was Private 3. Actually that was all it was, a splendidly furnished apartment with a palacelike dining salon dominating the five rooms, and one entire wall of the salon was lined with decorated mirror facings, behind which glittered hundreds of bottles of liquors.

The brands were strange to his inexpensive tastes, the scent of several that he opened heady and—quite uninviting. In the ladies' dressing room was a long showcase displaying a gleaming array of jewelry—several hundred thousand dollars' worth, if it was genuine, he estimated swiftly.

Leigh whistled softly to himself. On the surface, Constantine's appeared to supply good rental value for the money they charged.

"I'm glad you're physically big," said a cool voice behind him. "So many reporters are thin and small."

It was the voice that did it, subtly, differently toned than it

had been over the phone in the early afternoon. Deliberately different.

The difference, he noted as he turned, was in the body, too, the difference in the shape of a woman from a boy, skillfully but not perfectly concealed under the well-tailored man's suit—actually, of course, she was quite boyish in build, young, finely molded.

And, actually, he would never have suspected if she had not allowed her voice to be so purposefully womanish. She echoed his thought coolly: "Yes, I wanted you to know. But now, there's no use wasting words. You know as much as you need to know. Here's a gun. The spaceship is buried below this building."

Leigh made no effort to take the weapon, nor did he even glance at it. Instead, cool now that the first shock was over, he seated himself on the silk-yielding chair of the vanity dresser in one corner, leaned heavily back against the vanity itself, raised his eyebrows and said, "Consider me a slow-witted lunk who's got to know what it's all about. Why so much preliminary hocus-pocus?"

He thought deliberately: He had never in his adult life allowed himself to be rushed into anything. He was not going to start now.

III

The girl, he saw after a moment, was small of build. Which was odd, he decided carefully. Because his first impression had been of reasonable length of body. Or perhaps—he considered the possibility unhurriedly—this second effect was a more considered result of her male disguise.

He dismissed that particular problem as temporarily insoluble, and because actually—it struck him abruptly—this girl's size was unimportant. She had long, black lashes and dark eyes that glowed at him from a proud, almost haughty face. And that was it; quite definitely that was the essence of her blazing, powerful personality.

Pride was in the way she held her head. It was in the poised easiness of every movement, the natural shift from grace to grace as she walked slowly toward him. Not conscious pride here, but an awareness of superiority that affected every movement of her muscles, and came vibrantly into her voice, as she said scathingly, "I picked you because

every newspaper I've read today carried your account of the murders, and because it seemed to me that somebody who already was actively working on the case would be reasonably quick at grasping essentials. As for the dramatic preparation, I considered that would be more convincing than drab explanation. I see I was mistaken in all these assumptions."

She was quite close to him now. She leaned over, laid her revolver on the vanity beside his arm, and finished almost indifferently: "Here's an effective weapon. It doesn't shoot bullets, but it has a trigger and you aim it like any gun. In the event you develop the beginning of courage, come down the tunnel after me as quickly as possible, but don't blunder in on me and the people I shall be talking to. Stay hidden! Act only if I'm threatened."

Tunnel, Leigh thought stolidly, as she walked with a free, swift stride out of the room—tunnel here in this apartment called Private 3. Either he was crazy, or she was.

Quite suddenly, realization came that he ought to be offended at the way she had spoken. And that insultingly simple come-on trick of hers, leaving the room. Leaving him to develop curiosity—he smiled ruefully; if he hadn't been a reporter, he'd show her that such a second-rate psychology didn't work on him.

Still annoyed, he climbed to his feet, took the gun, and then paused briefly as the odd, muffled sound came of a door opening reluctantly—

He found her in the bedroom to the left of the dining salon; and because his mind was still in that state of pure receptiveness, which, for him, replaced indecisiveness, he felt only the vaguest surprise to see that she had the end of a lush green rug rolled back, and that there was a hole in the floor at her feet.

The gleaming square of floor that must have covered the opening, lay back neatly, pinned to position by a single, glitteringly complicated hinge. But Leigh scarcely noticed that.

His gaze reached beyond that—tunnel—to the girl; and, in that moment, just before she became aware of him, there was the barest suggestion of uncertainty about her. And her right profile, half turned away from him, showed pursed lips, a strained whiteness, as if—

The impression he received was of indecisiveness. He had the subtle sense of observing a young woman who, briefly,

had lost her superb confidence. Then she saw him; and his whole emotion picture twisted.

She didn't seem to stiffen in any way. Paying no attention to him at all, she stepped down to the first stair of the little stairway that led down into the hole, and began to descend without a quiver of hesitation. And yet—

Yet his first conviction that she had faltered brought him forward with narrowed eyes. And, suddenly, that certainty of her brief fear made this whole madness real. He plunged forward, down the steep stairway, and pulled up only when he saw that he was actually in a smooth, dimly lighted tunnel; and that the girl had paused, one finger to her lips.

"*Sssshh!*" she said. "The door of the ship may be open."

Irritation struck Leigh, a hard trickle of anger. Now that he had committed himself, he felt automatically the leader of this fantastic expedition; and that girl's pretensions, the devastating haughtiness of her merely produced his first real impatience.

"Don't *ssshh* me!" he whispered sharply. "Just give me the facts, and I'll do the rest."

He stopped. For the first time the meaning of all the words she had spoken penetrated. His anger collapsed like a plane in a crash landing.

"Ship!" he said incredulously. "Are you trying to tell me there's actually a spaceship buried here under Constantine's?"

The girl seemed not to hear; and Leigh saw that they were at the end of a short passageway. Metal gleamed dully just ahead. Then the girl was saying:

"Here's the door. Now, remember, you act as guard. Stay hidden, ready to shoot. And if I yell 'Shoot,' you shoot!"

She bent forward. There was the tiniest scarlet flash. The door opened, revealing a second door just beyond. Again that minute, intense blaze of red; and that door too swung open.

It was swiftly done, too swiftly. Before Leigh could more than grasp that the crisis was come, the girl stepped coolly into the brilliantly lighted room beyond the second door.

There was shadow where Leigh stood half-paralyzed by the girl's action. There was deeper shadow against the metal wall toward which he pressed himself in one instinctive move. He froze there, cursing silently at a stupid young woman who actually walked into a den of enemies of unknown numbers without a genuine plan of self-protection.

Or did she know how many there were? And who?

The questions made twisting paths in his mind down, down to a thrall of blankness—that ended only when an entirely different thought replaced it:

At least he was out here with a gun, unnoticed—or was he?

He waited tensely. But the door remained open; and there was no apparent movement towards it. Slowly, Leigh let himself relax, and allowed his straining mind to absorb its first considered impressions.

The portion of underground room that he could see showed one end of what seemed to be a control board, a metal wall that blinked with tiny lights, the edge of a rather sumptuous cot—and the whole was actually so suggestive of a spaceship that Leigh's logic resistance collapsed.

Incredibly, here under the ground, actually *under* Constantine's was a small spaceship and—

That thought ended, too, as the silence beyond the open door, the curiously long silence, was broken by a man's cool voice:

"I wouldn't even try to raise that gun if I were you. The fact that you have said nothing since entering shows how enormously different we are from what you expected."

He laughed gently, an unhurried, deep-throated derisive laughter that came clearly to Leigh. The man said:

"Merla, what would you say is the psychology behind this young lady's action? You have of course noticed that she is a young lady, and not a boy."

A richly toned woman's voice replied: "She was born here, Jeel. She has none of the normal characteristics of a Klugg, but she is a Galactic, though definitely not the Galactic Observer. Probably, she's not alone. Shall I investigate?"

"No!" The man sounded indifferent to the tensing Leigh. "We don't have to worry about a Klugg's assistant."

Leigh relaxed slowly, but there was a vast uneasiness in his solar nerves, a sense of emptiness, the first realization of how great a part the calm assurance of the young woman had played in the fabricating of his own basic confidence.

Shattered now! Before the enormous certainties of these two, and in the face of their instant penetration of her male disguise, the effects of the girl's rather wonderful personality seemed a remote pattern, secondary, definitely overwhelmed.

He forced the fear from him, as the girl spoke; forced his

courage to grow with each word she uttered, feeding on the haughty and immense confidence that was there. It didn't matter whether she was simulating or not, because they were in this now, he as deep as she; and only the utmost boldness could hope to draw a fraction of victory from the defeat that loomed so starkly.

With genuine admiration, he noted the glowing intensity of her speech, as she said, "My silence had its origin in the fact that you are the first Dreeghs I have ever seen. Naturally, I studied you with some curiosity, but I can assure you I am not impressed.

"However, in view of your extraordinary opinions on the matter, I shall come to the point at once: I have been instructed by the Galactic Observer of this system to inform you to be gone by morning. Our sole reason for giving you that much leeway is that we don't wish to bring the truth of all this into the open.

"But don't count on that. Earth is on the verge of being given fourth-degree rating; and, as you probably know, in emergencies fourths are given Galactic knowledge. That emergency we will consider to have arrived tomorrow at dawn."

"Well, well"—the man was laughing gently, satirically—"a pretty speech, powerfully spoken, but meaningless for us who can analyze its pretensions, however sincere, back to the Klugg origin."

"What do you intend with her, Jeel?"

The man was cold, deadly, utterly sure. "There's no reason why she should escape. She had blood and more than normal life. It will convey to the Observer with clarity our contempt for his ultimatum."

He finished with a slow, surprisingly rich laughter: "We shall now enact a simple drama. The young lady will attempt to jerk up her gun and shoot me with it. Before she can even begin to succeed, I shall have my own weapon out and firing. The whole thing, as she will discover, is a matter of nervous coordination. And Kluggs are chronically almost as slow-moving as human beings."

Silence.

His voice stopped. His laughter trickled away.

In all his alert years, Leigh had never felt more indecisive. His emotions said—*now*; surely, she'd call now. And even if she didn't, he must act on his own. Rush in! Shoot!

But his mind was cold with an awful dread. There was something about the man's voice, a surging power, a blazing, incredible certainty. Abnormal, savage strength was here; and if this was really a spaceship from the stars—

His brain wouldn't follow that flashing, terrible thought. He crouched, fingering the gun she had given him, dimly conscious for the first time that it felt queer, unlike any revolver he'd ever had.

He crouched stiffly, waiting—and the silence from the spaceship control room, from the tensed figures that must be there just beyond his line of vision, continued. The same curious silence that had followed the girl's entrance short minutes before. Only this time it was the girl who broke it, her voice faintly breathless but withal cool, vibrant, unafraid: "I'm here to warn, not to force issues. And unless you're charged with the life energy of fifteen men, I wouldn't advise you to try anything either. After all, I came here knowing what you were."

"What do you think, Merla? Can we be sure she's a Klugg? Could she possibly be of the higher Lennel type?"

It was the man, his tone conceding her point, but the decision was still there, the implacable purpose, the high, tremendous confidence.

And yet, in spite of that unrelenting sense of imminent violence, Leigh felt himself torn from the thought of her danger—and his. His reporter's brain twisted irresistibly to the fantastic meaning of what was taking place:

—*Life energy of fifteen men*—

It was all there; in a monstrous way it all fitted. The two dead bodies he had seen drained of blood and *life energy*, the repeated reference to a Galactic Observer, with whom the girl was connected.

Leigh thought almost blankly: Galactic meant—well—Galactic; and that was so terrific that— He grew aware that the woman was speaking.

"Klugg!" she said positively. "Pay no attention to her protestations, Jeel. You know, I'm sensitive when it comes to women. She's lying. She's just a little fool who walked in here expecting us to be frightened of her. Destroy her at your pleasure."

"I'm not given to waiting," said the man. "So—"

Quite automatically, Leigh leaped for the open doorway. He had a flashing glimpse of a man and woman, dressed in

evening clothes, the man standing, the woman seated. There was awareness of a gleaming, metallic background, the control board, part of which he had already seen, now revealed as a massive thing of glowing instruments; and then all that blotted out as he snapped, "That will do. Put up your hands."

For a long, dazzling moment he had the impression that his entry was a complete surprise; and that he dominated the situation. None of the three people in the room was turned toward him. The man, Jeel and the girl were standing, facing each other; the woman, Merla, sat in a deep chair, her fine profile to him, her golden head flung back.

It was she who, still without looking at him, sneered visibly—and spoke the words that ended his brief conviction of triumph. She said to the disguised girl, "You certainly travel in low company, a stupid human being. Tell him to go away before he's damaged."

The girl said, "Leigh, I'm sorry I brought you into this. Every move you made in entering was heard, observed and dismissed before you could even adjust your mind to the scene."

"Is his name Leigh?" said the woman sharply. "I thought I recognized him as he entered. He's very like his photograph over his newspaper column." Her voice grew strangely tense: "Jeel, a newspaper reporter!"

"We don't need him now," the man said. "We know who the Galactic Observer is."

"Eh?" said Leigh; his mind fastened hard on those amazing words. "Who? How did you find out? What—"

"The information," said the woman; and it struck him suddenly that the strange quality in her voice was eagerness, "will be of no use to you. Regardless of what happens to the girl, you're staying."

She glanced swiftly at the man, as if seeking his sanction. "Remember, Jeel, you promised."

It was all quite senseless, so meaningless that Leigh had no sense of personal danger. His mind scarcely more than passed the words; his eyes concentrated tautly on a reality that had, until that moment escaped his awareness. He said softly, "Just now you used the phrase, 'Regardless of what happens to the girl.' When I came in, you said, 'Tell him to go away before he's damaged.'"

Leigh smiled grimly: "I need hardly say this is a far cry from the threat of immediate death that hung over us a few seconds ago. And I have just now noticed the reason.

"A little while ago, I heard our pal, Jeel, dare my little girl

friend here to raise her gun. I notice now that *she has it raised*. My entrance did have an effect." He addressed himself to the girl, finished swiftly: "Shall we shoot—or withdraw?"

It was the man who answered: "I would advise withdrawal. I could still win, but I am not the heroic type who takes the risk of what might well be a close call."

He added, in an aside to the woman: "Merla, we can always catch this man, Leigh, now that we know who he is."

The girl said, "You first, Mr. Leigh." And Leigh did not stop to argue.

Metal doors clanged behind him, as he charged along the tunnel. After a moment, he was aware of the girl running lightly beside him.

The strangely unreal, the unbelievable murderous little drama was over, finished as fantastically as it had begun.

IV

Outside Constantine's a gray light gathered around them. A twilight side street it was, and people hurried past them with the strange, anxious look of the late for supper. Night was falling.

Leigh stared at his companion; in the dimness of the deep dusk, she seemed all boy, slightly, lithely built, striding along boldly. He laughed a little, huskily, then more grimly.

"Just what was all that? Did we escape by the skin of our teeth? Or did we win? What made you think you could act like God, and give those tough eggs twelve hours to get out of the Solar System?"

The girl was silent after he had spoken. She walked just ahead of him, head bent into the gloom. Abruptly, she turned, and said, "I hope you will have no nonsensical idea of telling what you've seen or heard."

Leigh said: "This is the biggest story since—"

"Look"—the girl's voice was pitying—"you're not going to print a word because in about ten seconds you'll see that no one in the world would believe the first paragraph."

In the darkness, Leigh smiled tightly: "The mechanical psychologist will verify every syllable."

"I came prepared for that, too!" said the vibrant voice. Her hand swung up, toward his face. Too late, he jerked back.

Light flared in his eyes, a dazzling, blinding force that ex-

ploded into his sensitive optic nerves with all the agonizing power of intolerable brightness. Leigh cursed aloud, wildly, and snatched forward toward his tormentor. His right hand grazed a shoulder. He lashed out violently with his left, and tantalizingly caught only the edge of a sleeve that instantly jerked away.

"You little devil!" he raged futilely. "You've blinded me."

"You'll be all right," came the cool answer, "but you'll find that the mechanical psychologist will report anything you say as the purest imagination. In view of your threat to publish, I had to do that. Now, give me my gun."

The first glimmer of sight was returning. Leigh could see her body a dim, wavering shape in the night. In spite of the continuing pain, Leigh smiled grimly. He said softly, "I've just now remembered you said this gun didn't shoot bullets. Even the *feel* of it suggests that it'll make an interesting proof of anything I say. So—"

His smile faded abruptly. For the girl stepped forward. The metal that jabbed into his ribs was so hardly thrust, it made him grunt.

"Give me that gun!"

"Like fun I will," Leigh snapped. "You ungrateful little ruffian, how dare you treat me so shoddily after I saved your life? I ought to knock you one right on the jaw for—"

He stopped—stopped because with staggering suddenness the hard, hard realization struck that she meant it. This was no girl raised in a refined school, who wouldn't dare to shoot, but a cold-blooded young creature, who had already proved the metalliclike fabric of which her courage was made.

He had never had any notions about the superiority of man over woman; and he felt none now. Without a single word, almost hastily, he handed the weapon over. The girl took it, and said coldly:

"You seem to be laboring under the illusion that your entry into the spaceship enabled me to raise my weapon. You're quite mistaken. What you did do was to provide me with the opportunity to let them think that that was the situation, and that they dominated it. But I assure you, that is the extent of your assistance, almost valueless."

Leigh laughed out loud, a pitying, ridiculing laugh.

"In my admittedly short life," he said laconically, "I've learned to recognize a quality of personality and magnetism in human beings. You've got it, a lot of it, but not a fraction

of what either of those two had, particularly the man. He was terrible. He was absolutely the most abnormally magnetic human being I've ever run across. Lady, I can only guess what all this is about, but I'd advise you"—Leigh paused, then finished slashing—"you and all the other Kluggs to stay away from that couple.

"Personally, I'm going to get the police in on this, and there's going to be a raid on Private 3. I didn't like that odd threat that they could capture me any time. Why me—"

He broke off hastily: "Hey, where are you going? I want to know your name. I want to know what made you think you could order those two around. *Who did you think you were?*"

He said no more, his whole effort concentrated on running. He could see her for a moment, a hazy, boyish figure against a dim corner light. Then she was around the corner.

His only point of contact with all this; and if she got away—

Sweating, he rounded the corner; and at first the street seemed dark and empty of life. Then he saw the car.

A normal-looking, high-hooded coupe, long, low-built, that began to move forward noiselessly and—quite normally.

It became abnormal. It lifted. Amazingly, it lifted from the ground. He had a swift glimpse of white rubber wheels folding out of sight. Streamlined, almost cigar-shaped now, the spaceship that had been a car darted at a steep angle into the sky.

Instantly it was gone.

Above Leigh, the gathering night towered, a strange, bright blue. In spite of the brilliant lights of the city glaring into the sky, one or two stars showed. He stared up at them, empty inside, thinking: *It was like a dream. Those—Dreeghs—coming out of space—bloodsuckers, vampires.*

Suddenly hungry, he bought a chocolate from a sidewalk stand, and stood munching it.

He began to feel better. He walked over to a nearby wall socket, and plugged in his wrist radio.

"Jim," he said, "I've got some stuff, not for publication, but maybe we can get some police action on it. Then I want you to have a mechanical psychologist sent to my hotel room. There must be some memory that can be salvaged from my brain—"

He went on briskly. His sense of inadequacy waned notably. Reporter Leigh was himself again.

V

The little glistening balls of the mechanical psychologist were whirring faster, faster. They became a single, glowing circle in the darkness. And not till then did the first, delicious whiff of psycho-gas touch his nostrils. He felt himself drifting, slipping—

A voice began to speak in the dim distance, so far away that not a word came through. There was only the sound, the faint, curious sound, and the feeling, stronger every instant, that he would soon be able to hear the fascinating things it seemed to be saying.

The longing to hear, to become a part of the swelling, murmuring sound drew his whole being in little rhythmical, wave-like surges. And still the promise of meaning was unfulfilled.

Other, private thoughts ended utterly. Only the mindless chant remained, and the pleasing gas holding him so close to sleep, its flow nevertheless so delicately adjusted that his mind hovered minute after minute on the ultimate abyss of consciousness.

He lay, finally, still partially awake, but even the voice was merging now into blackness. It clung for a while, a gentle, friendly, melodious sound in the remote background of his brain, becoming more remote with each passing instant. He slept, a deep, hypnotic sleep, as the machine purred on—

When Leigh opened his eyes, the bedroom was dark except for the floor lamp beside a corner chair. It illuminated the darkly dressed woman who sat there, all except her face, which was in shadow above the circle of light.

He must have moved, for the shadowed head suddenly looked up from some sheets of typewriter-size paper. The voice of Merla, the Dreegh, said:

"The girl did a very good job of erasing your subconscious memories. There's only one possible clue to her identity and—"

Her words went on, but his brain jangled them to senselessness in that first horrible shock of recognition. It was too much, too much fear in too short a time. For a brief, terrible moment, he was like a child, and strange, cunning, *intense* thoughts of escape came:

If he could slide to the side of the bed, away from where she was sitting, and run for the bathroom door—

"Surely, Mr. Leigh," the woman's voice reached toward him, "you know better than to try anything foolish. And, surely, if I had intended to kill you, I would have done it much more easily while you were asleep."

Leigh lay very still, gathering his mind back into his head, licking dry lips. Her words were utterly un reassuring. "What—do—you—want?" he managed finally.

"Information!" Laconically. "What was that girl?"

"I don't know." He stared into the half gloom, where her face was. His eyes were more accustomed to the light now, and he could catch the faint, golden glint of her hair. "I thought—you knew."

He went on more swiftly: "I thought you knew the Galactic Observer; and that implied the girl could be identified any time."

He had the impression she was smiling. She said, "Our statement to that effect was designed to throw both you and the girl off guard, and constituted the partial victory we snatched from what had become an impossible situation."

The body sickness was still upon Leigh, but the desperate fear that had produced it was fading before the implications of her confession of weakness, the realization that these Dreeghs were not so superhuman as he had thought. Relief was followed by caution. Careful, he warned himself, it wouldn't be wise to underestimate. But he couldn't help saying, "So you weren't so smart. And I'd like to point out that even your so-called snatching of victory from defeat was not so well done. Your husband's statement that you could pick me up any time could easily have spoiled the picking."

The woman's voice was cool, faintly contemptuous. "If you knew anything of psychology, you would realize that the vague phrasing of the threat actually lulled you. Certainly, you failed to take even minimum precautions. And the girl has definitely not made any effort to protect you."

The suggestion of deliberately subtle tactics brought to Leigh a twinge of returning alarm. Deep, deep inside him was the thought: What ending did the Dreegh woman plan for this strange meeting?

"You realize, of course," the Dreegh said softly, "that you will either be of value to us alive—or dead. There are no easy alternatives. I would advise alertness and utmost sincerity in your cooperation. You are in this affair without limit."

So that was the plan. A thin bead of perspiration trickled

down Leigh's cheek. And his fingers trembled as he reached for a cigarette on the table beside the bed.

He was shakily lighting the cigarette when his gaze fastened on the window. That brought a faint shock, for it was raining, a furious rain that hammered soundlessly against the noise-proof glass.

He pictured the bleak, empty streets, their brilliance dulled by the black, rain-filled night; and, strangely, the mind picture unnerved him.

Deserted streets—deserted Leigh. For he was deserted here; all the friends he had, scattered over the great reaches of the earth, couldn't add one ounce of strength, or bring one real ray of hope to him in this darkened room, against this woman who sat so calmly under the light, studying him from shadowed eyes.

With a sharp effort, Leigh steadied himself. He said, "I gather that's my psychograph report you have in your hand. What does it say?"

"Very disappointing." Her voice seemed far away. "There's a warning in it about your diet. It seems your meals are irregular."

She was playing with him. The heavy attempt at humor made her seem more inhuman, not less; for, somehow, the words clashed unbearably with the reality of her; the dark immensity of space across which she had come, the unnatural lusts that had brought her and the man to this literally unprotected Earth.

Leigh shivered. Then he thought fiercely: "Damn it, I'm scaring myself. So long as she stays in her chair, she can't pull the vampire on me."

The harder thought came that it was no use being frightened. He'd better simply be himself, and await events. Aloud, he said, "If there's nothing in the psychograph, then I'm afraid I can't help you. You might as well leave. Your presence isn't making me any happier."

In a dim way, he hoped she'd laugh. But she didn't. She sat there, her eyes glinting dully out of the gloom. At last, she said, "We'll go through this report together. I think we can safely omit the references to your health as being irrelevant. But there are a number of factors that I want developed. Who is Professor Ungarn?"

"A scientist." Leigh spoke frankly. "He invented this system of mechanical hypnosis, and he was called in when the

dead bodies were found because the killings seemed to have been done by perverts."

"Have you any knowledge of his physical appearance?"

"I've never seen him," Leigh said more slowly. "He never gives interviews, and his photograph is not available now. I've heard stories, but—"

He hesitated. It wasn't, he thought frowning, as if he was giving what was not general knowledge. What was the woman getting at, anyway? Ungarn—

"These stories," she said, "do they give the impression that he's a man of inordinate magnetic force, but with lines of mental suffering etched in his face, and a sort of resignation?"

"Resignation to what?" Leigh exclaimed sharply. "I haven't the faintest idea what you're talking about. I've only seen photographs, and they show a fine, rather sensitive, tired face."

She said, "There would be more information in any library?"

"Or in the Planetarian Service morgue," Leigh said, and could have bitten off his tongue for that bit of gratuitous information.

"Morgue?" said the woman.

Leigh explained, but his voice was trembling with self-rage. For seconds now the feeling had been growing on him: Was it possible this devilish woman was on the right track? And getting damaging answers out of him because he dared not stop and organize for lying.

Even as savage anxiety came, he had an incongruous sense of the unfairness of the abnormally swift way she had solved the Observer's identity because, damn it, damn it, it could be Professor Ungarn.

Ungarn, the mystery scientist, great inventor in a dozen highly complicated, widely separated fields; and there was that mysterious meteorite home near one of Jupiter's moons and he had a daughter, named Patricia. Good heavens, Patrick—Patricia—

His shaky stream of thoughts ended, as the woman said:

"Can you have your office send the information to your recorder here?"

"Y-yes!" His reluctance was so obvious that the woman bent into the light. For a moment, her golden hair glittered; her pale-blue eyes glowed at him in a strangely humorless, satanic amusement.

"Ah!" she said, "you think so, too?"

She laughed, an odd, musical laugh—odd in that it was at once so curt and so pleasant. The laugh ended abruptly, unnaturally, on a high note. And then—although he had not seen her move—there was a metal thing in her hand, pointing at him. Her voice came at him, with a brittle, jarring command:

"You will climb out of the bed, operate the recorder and naturally you will do nothing, say nothing but what is necessary."

Leigh felt genuinely dizzy. The room swayed, and he thought sickly: If he could only faint.

But he recognized dismally that that was beyond the power of his tough body. It was sheer mental dismay that made his nerves so shivery. And even that faded like fog in strong sunlight, as he walked to the recorder. For the first time in his life, he hated the resilience of strength that made his voice steady as a rock, as, after setting the machine, he said, "This is William Leigh. Give me all the dope you've got on Professor Garret Ungarn."

There was a pause, during which he thought hopelessly: "It wasn't as if he were giving information not otherwise accessible. Only—"

There was a click in the machine, then a brisk voice: "You've got it. Sign the form."

Leigh signed, and watched the signature dissolve into the machine. It was then, as he was straightening, that the woman said:

"Shall I read it here, Jeel, or shall we take the machine along?"

That was mind-wrecking. Like a man possessed, Leigh whirled; and then, very carefully, he sat down on the bed.

The Dreegh, Jeel, was leaning idly against the jamb of the bathroom door, a dark, malignantly handsome man, with a faint, unpleasant smile on his lips. Behind him—incredibly, behind him, through the open bathroom door was, not the gleaming bath, but another door; and beyond that door still another door, and beyond that—

The control room of the Dreegh spaceship!

There it was, exactly as he had seen it in the solid ground under Constantine's. He had the same partial view of the sumptuous cot, the imposing section of instrument board, the tastefully padded floor—

In his bathroom!

The insane thought came to Leigh: "Oh, yes, I keep my spaceship in my bathroom and—" It was the Dreegh's voice that drew his brain from its dizzy contemplation; the Dreegh saying, "I think we'd better leave. I'm having difficulty—holding the ship on the alternation of space-time planes. Bring the man and the machine and—"

Leigh didn't hear the last word. He jerked his mind all the way out of the—bathroom. "You're—taking—me?"

"Why, of course." It was the woman who spoke. "You've been promised to me, and, besides, we'll need your help in finding Ungarn's meteorite."

Leigh sat very still. The unnatural thought came: He was glad that he had in the past proven to himself that he was not a coward.

For here was certainty of death.

He saw after a moment that the rain was still beating against the glass, great, sparkling drops that washed murkily down the broad panes. And he saw that the night was dark.

Dark night, dark rain, dark destiny—they fitted his dark, grim thoughts. With an effort he forced his body, his mind, into greater stiffness. Automatically, he shifted his position, so that the weight of muscles would draw a tight band over the hollowness that he felt in his stomach. When at last he faced his alien captors again, Reporter Leigh was cold with acceptance of his fate—and prepared to fight for his life.

"I can't think of a single reason," he said, "why I should go with you. And if you think I'm going to help you destroy the Observer, you're crazy."

The woman said matter-of-factly: "There was a passing reference in your psychograph to a Mrs. Henry Leigh, who lives in a village called Relton, on the Pacific coast. We could be there in half an hour, your mother and her home destroyed within a minute after that. Or, perhaps, we could add her blood to our reserves."

"She would be too old," the man said in a chill tone. "We do not want the blood of old people."

It was the icy objection that brought horror to Leigh. He had a brief, terrible picture of a silent, immensely swift ship sweeping out of the Eastern night, over the peaceful hamlet; and then unearthly energies would reach down in a blaze of fury.

One second of slashing fire, and the ship would sweep on over the long, dark waters to the west.

The deadly picture faded. The woman was saying, gently:

"Jeel and I have evolved an interesting little system of interviewing human beings of the lower order. For some reason, he frightens people merely by his presence. Similarly, people develop an unnatural fear of me when they see me clearly in a strong light. So we have always tried to arrange our meetings with human beings with me sitting in semidarkness and Jeel very much in the background. It has proved very effective."

She stood up, a tall, lithely built, shadowed figure in a rather tight-fitting skirt and a dark blouse. She finished: "But now, shall we go? You bring the machine, Mr. Leigh."

"I'll take it," said the Dreegh.

Leigh glanced sharply at the lean, sinewed face of the terrible man, startled at the instant, accurate suspicion of the desperate intention that had formed in his mind.

The Dreegh loomed over the small machine, where it stood on a corner desk. "How does it work?" he asked almost mildly.

Trembling, Leigh stepped forward. There was still a chance that he could manage this without additional danger to anyone. Not that it would be more than a vexation, unless—as their suggestion about funding the Ungarn meteorite indicated—they headed straight out to space. Then, why, it might actually cause real delay. He began swiftly:

"Press the key marked 'Titles,' and the machine will type all the main headings."

"That sounds reasonable." The long, grim-faced head nodded. The Dreegh reached forward, pressed the button. The recorder hummed softly, and a section of it lit up, showing typed lines under a transparent covering. There were several headings.

"—'His Meteorite Home,' " the Dreegh read. "That's what I want. What is the next step?"

"Press the key marked 'Subheads.' "

Leigh was suddenly shaky. He groaned inwardly. Was it possible this creature-man was going to obtain the information he wanted? Certainly, such a tremendous intelligence would not easily be led away from logical sequence.

He forced himself to grimness. He'd have to take a chance.

"The subhead I desire," said the Dreegh, "is marked 'Location.' And there is a number, one, in front of it. What next?"

"Press Key No. 1," Leigh said, "then press the key lettered 'General Release.' "

The moment he had spoken, he grew taut. If this worked—and it should. There was no reason why it shouldn't.

Key No. 1 would impart all the information under that heading. And surely the man would not want more until later. After all, this was only a test. They were in a hurry.

And later, when the Dreegh discovered that the "General Release" key had dissolved all the other information—it would be too late.

The thought dimmed. Leigh started. The Dreegh was staring at him with a bleak sardonicism. The man said, "Your voice has been like an organ; each word uttered full of subtle shadings that mean much to the sensitive ear. Accordingly"—a steely, ferocious smile twisted that lean and deadly face—"I shall press Key No. 1. But not 'General Release.' And as soon as I've examined the little story on the recorder, I shall attend to you for that attempted trick. The sentence is—death."

"Jeel!"

"Death!" reiterated the man flatly. And the woman was silent.

There was silence, then, except for the subdued humming of the recorder. Leigh's mind was almost without thought. He felt fleshless, a strange, disembodied soul; and only gradually did a curious realization grow that he was waiting here on the brink of a night darker than the black wastes of space from which these monster humans had come.

Consciousness came of kinship with the black rain that poured with such solid, noiseless power against the glinting panes. For soon he would be part of the inorganic darkness—a shadowed figure sprawling sightlessly in this dim room.

His aimless gaze returned to the recorder machine, and to the grim man who stood so thoughtfully, staring down at the words it was unfolding.

His thought quickened. His life, that had been pressed so shockingly out of his system by the sentence of death, quivered forth. He straightened, physically and mentally. And, suddenly, there was purpose in him.

If death was inescapable, at least he could try again, somehow, to knock down that "General Release" key. He stared at

the key, measuring the distance; and the gray thought came: What incredible irony that he should die, that he should waste his effort, to prevent the Dreeghs from having *this minute* information that was available from ten thousand sources. And yet—

The purpose remained. Three feet, he thought carefully, perhaps four. If he should fling himself toward it, how could even a Dreegh prevent the dead weight of his body and his extended fingers from accomplishing such a simple, straightforward mission?

After all, his sudden action had once before frustrated the Dreeghs, permitting the Ungarn girl—in spite of her denials—to get her gun into position for firing. And—

He grew rigid as he saw that the Dreegh was turning away from the machine. The man pursed his lips, but it was the woman, Merla, who spoke from where she stood in the gloom: "Well?"

The man frowned. "The exact location is nowhere on record. Apparently, there has been no development of meteorites in this system. I suspected as much. After all, space travel has only existed a hundred years; and the new planets and the moons of Jupiter have absorbed all the energies of exploring, exploiting man."

"I could have told you that," said Leigh.

If he could move a little to one side of the recorder, so that the Dreegh would have to do more than simply put his arm out—

The man was saying, "There is, however, a reference to some man who transports food and merchandise from the moon Europa to the Ungarns. We will . . . er . . . persuade this man to show us the way."

"One of these days," said Leigh, "you're going to discover that all human beings cannot be persuaded. What pressure are you going to put on this chap? Suppose he hasn't got a mother."

"He has—life!" said the woman softly.

"One look at you," Leigh snapped, "and he'd know that he'd lose that, anyway."

As he spoke, he stepped with enormous casualness to the left, one short step. He had a violent impulse to say something, anything to cover the action. But his voice had betrayed him once. And actually it might already have done so again. The cold face of the man was almost too enigmatic.

"We could," said the woman, "use William Leigh to persuade him."

The words were softly spoken, but they shocked Leigh to his bones. For they offered a distorted hope. And that shattered his will to action. His purpose faded into remoteness. Almost grimly, he fought to draw that hard determination back into his consciousness. He concentrated his gaze on the recorder machine, but the woman was speaking again; and his mind wouldn't hold anything except the urgent meaning of her words:

"He is too valuable a slave to destroy. We can always take his blood and energy, but now we must send him to Europa, there to find the freighter pilot of the Ungarns, and actually accompany him to the Ungarn meteorite. If he could investigate the interior, our attack might conceivably be simplified, and there is just a possibility that there might be new weapons, of which we should be informed. We must not underestimate the science of the great Galactics.

"Naturally, before we allowed Leigh his freedom, we would do a little tampering with his mind, and so blot out from his conscious mind all that has happened in this hotel room.

"The identification of Professor Ungarn as the Galactic Observer we would make plausible for Leigh by a little rewriting of his psychograph report; and tomorrow he will waken in his bed with a new purpose, based on some simple human impulse such as love of the girl."

The very fact that the Dreegh, Jeel, was allowing her to go on, brought the first, faint color to Leigh's cheeks, a thin flush at the enormous series of betrayals she was so passionately expecting of him. Nevertheless, so weak was his resistance to the idea of continued life, that he could only snap:

"If you think I'm going to fall in love with a dame who's got twice my I. Q., you're—"

The woman cut him off. "Shut up, you fool! Can't you see I've saved your life?"

The man was cold, ice-cold. "Yes, we shall use him, not because he is essential, but because we have time to search for easier victories. The first members of the Dreegh tribe will not arrive for a month and a half, and it will take Mr. Leigh a month of that to get to the moon, Europa, by one of Earth's primitive passenger liners. Fortunately, the nearest

Galactic military base is well over three months distant—by Galactic ship speeds.

"Finally"—with a disconcerting, tigerish swiftness, the Dreegh whirled full upon Leigh; eyes that were like pools of black fire measured his own startled stare—"finally, as a notable reminder to your subconscious of the error of trickery, and as complete punishment for past and—intended—offenses, *this!*"

Despairingly, Leigh twisted away from the metal that glowed at him. His muscles tried horribly to carry out the purpose that had been working to a crisis inside him. He lunged for the recorder—but *something* caught his body. Something—not physical. But the very pain seemed mortal.

There was no visible flame of energy, only that glow at the metal source. But his nerves writhed; enormous forces contorted his throat muscles, froze the scream that quivered there, hideously.

His whole being welcomed the blackness that came mercifully to blot out the hellish pain.

VI

On the third day, Europa began to give up some of the sky to the vast mass of Jupiter behind it. The engines that so imperfectly transformed magnetic attraction to a half-hearted repulsion functioned more and more smoothly as the infinite complication of pull and counterpull yielded to distance.

The old, slow, small freighter scurried on into the immense, enveloping night; and the days dragged into weeks, the weeks crawled their drab course toward the full month.

On the thirty-seventh day, the sense of slowing up was so distinct that Leigh crept dully out of his bunk, and croaked, "How much farther?"

He was aware of the stolid-faced space trucker grinning at him. The man's name was Hanardy, and he said now matter-of-factly, "We're just pulling in. See that spot of light over to the left? It's moving this way."

He ended with a rough sympathy. "Been a tough trip, eh? Tougher'n you figgered when you offered to write up my little route for your big syndicate."

Leigh scarcely heard. He was clawing at the porthole, straining to penetrate the blackness. At first his eyes kept

blinking and nothing came. Stars were out there, but it was long seconds before his bleary gaze made out moving lights. He counted them with sluggish puzzlement:

"One, two, three—seven—" he counted. "And all traveling together."

"What's that?" Hanardy bent beside him. "Seven?"

There was a brief silence between them, as the lights grew visibly dim with distance, and winked out.

"Too bad," Leigh ventured, "that Jupiter's behind us. They mightn't fade out like that in silhouette. Which one was Ungarn's meteorite?"

With a shock, he grew aware that Hanardy was standing. The man's heavy face was dark with frown. Hanardy said slowly:

"Those were ships. I never saw ships go so fast before. They were out of sight in less than a minute."

The frown faded from his stolid face. He shrugged. "Some of those new police ships, I guess. And we must have seen them from a funny angle for them to disappear so fast."

Leigh half sat, half knelt, frozen into immobility. And after that one swift glance at the pilot's rough face, he averted his own. For a moment, the black fear was in him that his wild thoughts would blaze from his eyes.

Dreeghs! Two and a half months had wound their appallingly slow course since the murders. More than a month to get from Earth to Europa, and now this miserable, lonely journey with Hanardy, the man who trucked for the Ungarns.

Every day of that time, he had known with an inner certainty that none of this incredible business had gone backward. That it could only have assumed a hidden, more dangerous form. The one fortunate reality in the whole mad affair was that he had wakened on the morning after the mechanical psychologist test from a dreamless sleep; and there in the psychograph report was the identification of Ungarn as the Observer, and the statement, borne out by an all too familiar emotional tension, that he was in love with the girl.

Now this! His mind flared. Dreeghs in seven ships. That meant the first had been reinforced by—many. And perhaps the seven were only a reconnaissance group, withdrawing at Hanardy's approach.

Or perhaps those fantastic murderers had already attacked the Observer's base. Perhaps the girl—

He fought the desperate thought out of his consciousness, and watched, frowning, as the Ungarn meteorite made a dark, glinting path in the blackness to one side. The two objects, the ship and the bleak, rough-shaped mass of metallic stone drew together in the night, the ship slightly behind.

A great steel door slid open in the rock. Skillfully, the ship glided into the chasm. There was a noisy clicking. Hanardy came out of the control room, his face dark with puzzlement.

"Those damn ships are out there again," he said. "I've closed the big steel locks, but I'd better tell the professor and—"

Crash! The world jiggled. The floor came up and hit Leigh a violent blow. He lay there, cold in spite of the thoughts that burned at fire heat in his mind:

For some reason, the vampires had waited until the freighter was inside. Then instantly, ferociously, attacked.

In packs!

"Hanardy!" A vibrant girl's voice blared from one of the loudspeakers.

The pilot sat up shakily on the floor, where he had fallen, near Leigh. "Yes, Miss Patricia."

"You dared to bring a stranger with you!"

"It's only a reporter, miss; he's writing up my route for me."

"You conceited fool! That's William Leigh. He's a hypnotized spy of those devils who are attacking us. Bring him immediately to my apartment. He must be killed at once."

"Huh!" Leigh began; and then slowly he began to stiffen. For the pilot was staring at him from narrowing eyes, all the friendliness gone from his rough, heavy face. Finally, Leigh laughed curtly.

"Don't you be a fool, too, Hanardy. I made the mistake once of saving that young lady's life, and she's hated me ever since."

The heavy face scowled at him. "So you knew her before, eh? You didn't tell me that. You'd better come along before I sock you one."

Almost awkwardly, he drew the gun from his side holster, and pointed its ugly snout at Leigh.

"Get along!" he said.

Hanardy reached toward a tiny arrangement of lights

beside the paneled door of Patricia Ungarn's apartment—and Leigh gave one leap, one blow. He caught the short, heavy body as it fell, grabbed at the sagging gun, lowered the dead weight to the floor of the corridor; and then, for a grim, tense moment, he stood like a great animal, straining for sound.

Silence! He studied the bland panels of the doorway to the apartment, as if by sheer, savage intentness he would penetrate their golden, beautiful grained opaqueness.

It was the silence that struck him again after a moment, the emptiness of the long, tunnel-like corridors. He thought, amazed: Was it possible father and daughter actually lived here without companions or servants or any human association? And that they had some idea that they could withstand the attack of the mighty and terrible Dreeghs?

They had a lot of stuff here, of course: Earthlike gravity and—and, by heaven, he'd better get going before the girl acquired impatience and came out with one of her fancy weapons. What he must do was quite simple, unconnected with any nonsense of spring, hypnotic or otherwise.

He must find the combination automobile-spaceship in which—*Mr. Patrick*—had escaped him that night after they left Constantine's. And with that tiny ship, he must try to slip out of Ungarn's meteorite, sneak through the Dreegh line, and so head back for Earth.

What a fool he had been, a mediocre human being, mixing in such fast, brainy company. The world was full of more normal, thoroughly dumb girls. Why in hell wasn't he safely married to one of them and—and damn it, it was time he got busy.

He began laboriously to drag Hanardy along the smooth flooring. Halfway to the nearest corner, the man stirred. Instantly, quite coolly, Leigh struck him with the revolver butt, hard. This was not time for squeamishness.

The pilot dropped; and the rest was simple. He deserted the body as soon as he had pulled it out of sight behind the corner, and raced along the hallway, trying doors. The first four wouldn't open. At the fifth, he pulled up in a dark consideration.

It was impossible that the whole place was locked up. Two people in an isolated meteorite wouldn't go around perpetually locking and unlocking doors. There must be a trick catch.

There was. The fifth door yielded to a simple pressure on a tiny, half-hidden push button, that had seemed an integral

part of the design of the latch. He stepped through the entrance, then started back in brief, terrible shock.

The room had no ceiling. Above him was—space. An ice-cold blast of air swept at him.

He had a flashing glimpse of gigantic machines in the room, machines that dimly resembled the ultramodern astronomical observatory on the moon that he had visited on opening day two days before. That one, swift look was all Leigh allowed himself. Then he stepped back into the hallway. The door of the observatory closed automatically in his face.

He stood there, chagrined. Silly fool! The very fact that cold air had blown at him showed that the open effect of the ceiling was only an illusion of invisible glass. Good Lord, in that room might be wizard telescopes that could see to the stars. Or—an ugly thrill raced along his spine—he might have seen the Dreeghs attacking.

He shook out of his system the brief, abnormal desire to look again. This was no time for distractions. For, by now, the girl must know that something was wrong.

At top speed, Leigh ran to the sixth door. It opened into a little cubbyhole. A blank moment passed before he recognized what it was.

An elevator!

He scrambled in. The farther he got away from the residential floor, the less the likelihood of quick discovery.

He turned to close the door, and saw that it was shutting automatically. It clicked softly; the elevator immediately began to go up. Piercingly sharp doubt came to Leigh. The machine was apparently geared to go to some definite point. And that could be very bad.

His eyes searched hastily for controls. But nothing was visible. Gun poised, he stood grim and alert as the elevator stopped. The door slid open.

Leigh stared. There was no room. The door opened—onto blackness.

Not the blackness of space with its stars. Or a dark room, half revealed by the light from the elevator. But—blackness!

Impenetrable.

Leigh put a tentative hand forward, half expecting to feel a solid object. But as his hand entered the black area, it vanished. He jerked it back, and stared at it, dismayed. It shone with a light of its own, all the bones plainly visible.

Swiftly, the light faded, the skin became opaque, but his whole arm pulsed with a pattern of pain.

The stark, terrible thought came that this could be a death chamber. After all, the elevator had deliberately brought him here; it might not have been automatic. Outside forces could have directed it. True, he had stepped in of his own free will, but—

Fool, fool!

He laughed bitterly, braced himself—and then it happened.

There was a flash out of the blackness. Something that sparkled vividly, something material that blazed a brilliant path to his forehead—and drew itself inside his head. And then—

He was no longer in the elevator. On either side of him stretched a long corridor. The stocky Hanardy was just reaching for some tiny lights beside the door of Patricia Ungarn's apartment.

The man's fingers touched one of the lights. It dimmed. Softly, the door opened. A young woman with proud, insolent eyes and a queenlike bearing stood there.

"Father wants you down on Level 4," she said to Hanardy. "One of the energy screens has gone down; and he needs some machine work before he can put up another."

She turned to Leigh; her voice took on metallic overtones as she said: "*Mr. Leigh, you can come in!*"

The crazy part of it was that he walked in with scarcely a physical tremor. A cool breeze caressed his cheeks; and there was the liltingly sweet sound of birds singing in the distance. Leigh stood stockstill for a moment after he had entered, dazed partly by the wonders of the room and the unbelievable sunlit garden beyond the French windows, partly, by—what?

What had happened to him?

Gingerly, he put his hands to his head, and felt his forehead, then his whole head. But nothing was wrong, not a contusion, not a pain. He grew aware of the girl staring at him, and realization came that his actions must seem unutterably queer.

"What is the matter with you?" the girl asked.

Leigh looked at her with abrupt, grim suspicion. He snapped harshly: "Don't pull that innocent stuff. I've been up in the blackness room, and all I've got to say is, if you're going to kill me, don't skulk behind artificial night and other trickery."

The girl's eyes, he saw, were narrowed, unpleasantly cold. "I don't know what you're trying to pretend," she said icily. "I assure you it will not postpone the death we have to deal you."

She hesitated, then finished sharply: "The *what* room?"

Leigh explained grimly, puzzled by her puzzlement, then annoyed by the contemptuous smile that grew into her face. She cut him off curtly: "I've never heard a less balanced story. If your intention was to astound me and delay your death with that improbable tale, it has failed. You must be mad. You didn't knock out Hanardy, because when I opened the door, Hanardy was there, and I sent him down to Father."

"See here!" Leigh began. He stopped wildly. By heaven, Hanardy had been there as she opened the door!

And yet earlier—

WHEN?

Doggedly, Leigh pushed the thought on: Earlier, he had attacked Hanardy. And then he—Leigh—had gone up in an elevator; and then, somehow, back and—

Shakily, he felt his head again. And it was absolutely normal. Only, he thought, there was something inside it that sparkled.

Something—

With a start, he grew aware that the girl was quite deliberately drawing a gun from a pocket of her simple white dress. He stared at the weapon, and before its gleaming menace, his thoughts faded, all except the deadly consciousness that what he had said had delayed her several minutes now. It was the only thing that could delay her further until, somehow—

The vague hope wouldn't finish. Urgently, he said, "I'm going to assume you're genuinely puzzled by my words. Let's begin at the beginning. There is such a room, is there not?"

"Please," said the girl wearily, "let us not have any of your logic. My I. Q. is 243, yours is 112. So I assure you I am quite capable of reasoning from any beginning you can think of."

She went on, her low voice as curt as the sound of struck steel: "There is no 'blackness' room, as you call it, no sparkling thing that crawls inside a human head. There is but one fact: The Dreeghs in their visit to your hotel room, hypnotized you; and this curious mind illusion can only be a result of that hypnotism—don't argue with me—"

With a savage gesture of her gun, she cut off his attempt to

“There’s no time. For some reason, the Dreeghs did something to you. Why? What did you see in those rooms?”

Even as he explained and described, Leigh was thinking that he’d have to catch hold of himself, get a plan, however risky, and carry it through. The purpose was tight and cold in his mind as he obeyed her motion, and went ahead of her into the corridor. It was there, an icy determination, as he counted the doors from the corner where he had left the unconscious Hanardy.

“One, two, three, four, *five*. This door!” he said.

“Open it!” The girl gestured.

He did so; and his lower jaw sagged. He was staring into a fine, cozy room filled with shelf on shelf of beautifully bound books. There were comfortable chairs, a magnificent rag rug and—

It was the girl who closed the door firmly and—he trembled with the tremendousness of the opportunity—she walked ahead of him to the sixth door.

“And this is your elevator?”

Leigh nodded mutely; and because his whole body was shaking, he was only dimly surprised that there was no elevator, but a long, empty, silent corridor.

The girl was standing with her back partly to him; and if he hit her, it would knock her hard against the door jamb and—

The sheer brutality of the thought was what stopped him, held him for the barest second—as the girl whirled, and looked straight into his eyes.

Her gun was up, pointing steadily. “Not that way,” she said quietly. “For a moment I was wishing you would have the nerve to try it. But, after all, that would be the weak way for me.”

Her eyes glowed with a fierce pride. “After all, I’ve killed before through necessity, and hated it. You can see yourself that, because of what the Dreeghs have done to you, it is necessary. So—”

Her voice took on a whiplash quality. “So back to my rooms. I have a space lock there to get rid of your body. Get going!”

It was the emptiness, the silence except for the faint click of their shoes that caught at Leigh’s nerves, as he walked hopelessly back to the apartment. This meteorite hurtling

darkly through the remote wastes of the Solar System, pursued and attacked by deadly ships from the fixed stars, and himself inside it, under sentence of death, the executioner to be a girl—

And that was the devastating part. He couldn't begin to argue with this damnable young woman, for every word would sound like pleading. The very thought of mentally getting down on his knees to any woman was paralyzing.

The singing of the birds, as he entered the apartment, perked him violently out of his black passion. Abruptly marveling, he walked to the stately French windows and stared at the glorious summery garden.

At least two acres of green wonder spread before him, a blaze of flowers, trees where gorgeously colored birds fluttered and trilled, a wide, deep pool of green, green water, and over all, the glory of brilliant sunshine.

It was the sunshine that held Leigh finally; and he stood almost breathless for a long minute before it seemed that he had the solution. He said in a hushed voice, without turning:

"The roof—is an arrangement—of magnifying glass. It makes the Sun as big as on Earth. Is that the—"

"You'd better turn around," came the hostile, vibrant voice from behind him. "I don't shoot people in the back. And I want to get this over with."

It was the moralistic smugness of her words that shook every muscle in Leigh's body. He whirled, and raged: "You damned little Klugg. You can't shoot me in the back, eh? Oh, no! And you couldn't possibly shoot me while I was attacking you because that would be the weak way. It's all got to be made tight with your conscience."

He stopped so short that, if he had been running instead of talking, he would have stumbled. Figuratively, almost literally, he saw Patricia Ungarn for the first time since his arrival. His mind had been so concentrated, so absorbed by deadly things that—

—For the first time as a woman.

Leigh drew a long breath. Dressed as a man, she had been darkly handsome in an extremely youthful fashion. Now she wore a simple, snow-white sports dress. It was scarcely more than a tunic, and came well above her knees.

Her hair shone with a brilliant brownness, and cascaded down to her shoulders. Her bare arms and legs gleamed a deep, healthy tan. Sandals pure white graced her feet. Her face—

The impression of extraordinary beauty yielded to the amazing fact that her perfect cheeks were flushing vividly. The girl snapped: "Don't you dare use that word to me."

She must have been utterly beside herself. Her fury was such an enormous fact that Leigh gasped; and he couldn't have stopped himself from saying what he did, if the salvation of his soul had depended on it.

"Klugg!" he said, "Klugg, Klugg, Klugg! So you realize now that the Dreeghs had you down pat, that all your mighty pretension was simply your Klugg mind demanding pretentious compensation for a dreary, lonely life. You had to think you were somebody, and yet all the time you must have known they'd only ship the tenth-raters to these remote posts. Klugg, not even Lennel; the Dreegh woman wouldn't even grant you Lennel status, whatever that is. And she'd know. Because if you're I. Q. 243, the Dreeghs were 400. You've realized that, too, haven't you?"

"Shut up! Or I'll kill you by inches!" said Patricia Ungarn; and Leigh was amazed to see that she was as white as a sheet. The astounded realization came that he had struck, not only the emotional Achilles heel of this strange and terrible young woman, but the very vital roots of her mental existence.

"So," he said deliberately, "the high morality is growing dim. Now you can torture me to death without a qualm. And to think that I came here to ask you to marry me because I thought a Klugg and a human being might get along."

"You what?" said the girl. Then she sneered. "So that was the form of their hypnotism. They would use some simple impulse for a simple human mind."

"But now I think we've had just about enough. I know just the type of thoughts that come to a male human in love; and even the realization that you're not responsible makes the very idea none the less bearable. I feel sickened, utterly insulted. Know, please, that my future husband is arriving with the reinforcements three weeks from now. He will be trained to take over Father's work—"

"Another Klugg!" said Leigh, and the girl turned shades whiter.

Leigh stood utterly thunderstruck. In all his life, he had never gotten anybody going the way he had this young girl. The intellectual mask was off, and underneath was a seething mass of emotions bitter beyond the power of words to

express. Here was evidence of a life so lonely that it strained his imagination. Her every word showed an incredible pent-up masochism as well as sadism, for she was torturing herself as well as him.

And he couldn't stop now to feel sorry for her. His life was at stake, and only more words could postpone death—or bring the swift and bearable surcease of a gun fired in sudden passion. He hammered on grimly: "I'd like to ask one question. How did you find out my I. Q. was 112? What special interest made you inquire about that? Is it possible that, all by yourself here, you, too, had a special type of thought, and that, though your intellect rejected the very idea of such lowly love, its existence is the mainspring behind your fantastic determination to kill, rather than cure me? I—"

"That will do," interrupted Patricia Ungarn.

It required one lengthy moment for Leigh to realize that in those few short seconds she had pulled herself completely together.

He stared in gathering alarm, as her gun motioned toward a door he had not seen before.

She said curtly, "I suppose there is a solution other than death. That is, immediate death. And I have decided to accept the resultant loss of my spaceship."

She nodded at the door. "It's there in the air lock. It works very simply. The steering wheel pulls up or down or sideways, and that's the way the ship will go. Just step on the accelerator, and the machine will go forward. The decelerator is the left pedal. The automobile wheels fold in automatically as soon as they lift from the floor.

"Now, get going. I need hardly tell you that the Dreeghs will probably catch you. But you can't stay here. That's obvious."

"Thanks!" That was all Leigh allowed himself to say. He had exploded an emotional powder keg, and he dared not tamper even a single word further. There was a tremendous psychological mystery here, but it was not for him to solve.

Suddenly shaky from realization of what was still ahead of him, he walked gingerly toward the air lock. And then—

It happened!

He had a sense of unutterable nausea. There was a wild swaying through blackness and—

He was standing at the paneled doorway leading from the corridor to Patricia Ungarn's apartment. Beside him stood Hanardy. The door opened. The young woman who stood

there said strangely familiar words to Hanardy, about going down to the fourth level to fix an energy screen. Then she turned to Leigh, and in a voice hard and metallic said, "Mr. Leigh, you can come in."

VII

The crazy part of it was that he walked in with scarcely a physical tremor. A cool breeze caressed his cheeks; and there was the liltingly sweet sound of birds singing in the distance. Leigh stood stockstill for a moment after he had entered; by sheer will power he emptied the terrible daze out of his mind, and bent, mentally, into the cyclone path of complete memory. Everything was there suddenly, the way the Dreeghs had come to his hotel apartment and ruthlessly forced him to their will, the way the "blackness" room had affected him, and how the girl had spared his life.

For some reason, the whole scene with the girl had been unsatisfactory to—Jeel; and it was now, fantastically, to be repeated.

That thought ended. The entire tremendous reality of what had happened yielded to a vastly greater fact:

There was—something—inside his head, a distinctly physical something; and in a queer, horrible, inexperienced way, his mind was instinctively fighting—it. The result was ghastly confusion. Which hurt him, not the thing.

Whatever it was, rested inside his head, unaffected by his brain's feverish contortions, cold, aloof, watching.

Watching.

Madly, then, he realized what it was. Another mind. Leigh shrank from the thought as from the purest destroying fire. He tensed his brain. For a moment the frenzy of his horror was so great that his face twisted with the anguish of his efforts. And everything blurred.

Exhausted finally, he simply stood there. And the thing—mind was still inside his head.

Untouched.

What had happened to him?

Shakily, Leigh put his hands up to his forehead; then he felt his whole head; there was a vague idea in him that if he pressed—

He jerked his hands down with an unspoken curse. Damnation on damnation, he was even repeating the actions of

this scene. He grew aware of the girl staring at him. He heard her say, "What is the matter with you?"

It was the sound of the words, exactly the same words, that did it. He smiled wryly. His mind drew back from the abyss, where it had teetered.

He was sane again.

Gloomy recognition came then that his brain was still a long way down; sane yes, but dispirited. It was only too obvious that the girl had no memory of the previous scene, or she wouldn't be parroting. She'd—

That thought stopped, too. Because a strange thing was happening. The mind inside him stirred, and looked through his—Leigh's—eyes. Looked intently.

Intently.

The room and the girl in it changed, not physically, but subjectively, in what he saw, in the—details.

Details burned at him; furniture and design that a moment before had seemed a flowing, artistic whole, abruptly showed flaws, hideous errors in taste and arrangement and structure.

His gaze flashed out to the garden, and in instants tore it to mental shreds. Never in all his existence had he seen or felt criticism on such a high, devastating scale. Only—

Only it wasn't criticism. Actually. The mind was indifferent. It saw things. Automatically, it saw some of the possibilities; and by comparison the reality suffered.

It was not a matter of anything being hopelessly bad. The wrongness was frequently a subtle thing. Birds not suited, for a dozen reasons, to their environment. Shrubs that added infinitesimal discord not harmony to the superb garden.

The mind flashed back from the garden; and this time, for the first time, studied the girl.

On all Earth, no woman had ever been so piercingly examined. The structure of her body and her face, to Leigh so finely, proudly shaped, so gloriously patrician—found low grade now.

An excellent example of low-grade development in isolation.

That was the thought, not contemptuous, not derogatory, simply an impression by an appallingly direct mind that saw—overtones, realities behind realities, a thousand facts where one showed.

There followed crystal-clear awareness of the girl's psychol-

ogy, objective admiration for the system of isolated upbringing that made Klugg girls such fine breeders; and then—

Purpose!

Instantly carried out. Leigh took three swift steps toward the girl. He was aware of her snatching at the gun in her pocket, and there was the sheerest startled amazement on her face. Then he had her.

Her muscles writhed like steel springs. But they were hopeless against his superstrength, his superspeed. He tied her with some wire he had noticed in a half-opened clothes closet.

Then he stepped back, and to Leigh came the shocked personal thought of the incredible thing that had happened, comprehension that all this, which seemed so normal, was actually so devastatingly superhuman, so swift that—seconds only had passed since he came into the room.

Private thought ended. He grew aware of the mind, contemplating what it had done, and what it must do before the meteorite would be completely under control.

Vampire victory was near.

There was a phase of walking along empty corridors, down several flights of stairs. The vague, dull thought came to Leigh, his own personal thought, that the Dreegh seemed to know completely the interior of the meteorite.

Somehow, during the periods of—transition, of time manipulation, the creature-mind must have used his, Leigh's, body to explore the vast tomb of a place *thoroughly*. And now, with utter simplicity of purpose—he was heading for the machine shops on the fourth level, where Professor Ungarn and Hanardy labored to put up another energy defense screen.

He found Hanardy alone, working at a lathe that throbbed—and the sound made it easy to sneak up—

The professor was in a vast room, where great engines hummed a strange, deep tune of titanic power. He was a tall man, and his back was turned to the door as Leigh entered.

But he was immeasurably quicker than Hanardy, quicker even than the girl. He sensed danger. He whirled with a cat-like agility. Literally. And succumbed instantly to muscles that could have torn him limb from limb. It was during the binding of the man's hands that Leigh had time for an impression.

In the photographs that Leigh had seen, as he had told the

Dreegh, Merla, in the hotel, the professor's face had been sensitive, tired-looking, withal noble. He was more than that, tremendously more.

The man radiated power, as no photograph could show it, good power in contrast to the savage, malignant, immensely great power of the Dreegh.

The sense of power faded before the aura of—weariness. Cosmic weariness. It was a lined, an amazingly lined face. In a flash, Leigh remembered what the Dreegh woman had said; and it was all there: deep-graven lines of tragedy and untold mental suffering, interlaced with a curious peacefulness, like—resignation.

On that night months ago, he had asked the Dreegh woman: Resignation to what? And now, here in this tortured, kindly face was the answer:

Resignation to hell.

Queerly, an unexpected second answer trickled in his mind: Morons; they're Galactic morons. Kluggs.

The thought seemed to have no source; but it gathered with all the fury of a storm. Professor Ungarn and his daughter were Kluggs, *morons* in the incredible Galactic sense. No wonder the girl had reacted like a crazy person. Obviously born here, she must have only guessed the truth in the last two months.

The I. Q. of human morons wavered between seventy-five and ninety, of Kluggs possibly between two hundred twenty-five and, say, two hundred forty-three.

Two hundred forty-three. What kind of civilization was this Galactic—if Dreeghs were four hundred and—

Somebody, of course, had to do the dreary, routine work of civilization; and Kluggs and Lennels and their kind were obviously elected. No wonder they looked like morons with that weight of inferiority to influence their very nerve and muscle structure. No wonder whole planets were kept in ignorance—

Leigh left the professor tied hand and foot, and began to turn off power switches. Some of the great motors were slowing noticeably as he went out of that mighty engine room; the potent hum of power dimmed.

Back in the girl's room, he entered the air lock, climbed into the small automobile spaceship—and launched into the night.

Instantly, the gleaming mass of meteorite receded into the

darkness behind him. Instantly, magnetic force rays caught his tiny craft, and drew it remorselessly toward the hundred and fifty foot, cigar-shaped machine that flashed out of the darkness.

He felt the spy rays; and he must have been recognized. For another ship flashed up to claim him.

Air locks opened noiselessly—and shut. Sickly, Leigh stared at the two Dreeghs, the tall man and the tall woman; and, as from a great distance, heard himself explaining what he had done.

Dimly, hopelessly, he wondered why he should have to explain. Then he heard Jeel say:

"Merla, this is the most astoundingly successful case of hypnotism in our existence. He'd done—everything. Even the tiniest thoughts we put into his mind have been carried out to the letter. And the proof is, the screens are going down. With the control of this station, we can hold out even after the Galactic warships arrive—and fill our tankers and our energy reservoirs for ten thousand years. Do you hear, *ten thousand years?*"

His excitement died. He smiled with sudden, dry understanding as he looked at the woman. Then he said laconically:

"My dear, the reward is all yours. We could have broken down those screens in another twelve hours, but it would have meant the destruction of the meteorite. This victory is so much greater. Take your reporter. Satisfy your craving—while the rest of us prepare for the occupation. Meanwhile, I'll tie him up for you."

Leigh thought, a cold, remote thought: The kiss of death—

He shivered in sudden, appalled realization of what he had done—

He lay on the couch, where Jeel had tied him. He was surprised, after a moment, to notice that, though the mind had withdrawn into the background of his brain—it was still there, cold, steely, abnormally conscious.

The wonder came: what possible satisfaction could Jeel obtain from experiencing the mortal thrill of death with him? These people were utterly abnormal, of course, but—

The wonder died like dry grass under a heat ray, as the woman came into the room, and glided toward him. She smiled; she sat down on the edge of the couch.

"So here you are," she said.

She was, Leigh thought, like a tigress. There was purpose in every cunning muscle of her long body. In surprise he saw that she had changed her dress. She wore a sleek, flimsy, sheeny, tight-fitting gown that set off in startling fashion her golden hair and starkly white face. Utterly fascinated, he watched her. Almost automatically, he said, "Yes, I'm here."

Silly words. But he didn't feel silly. Tenseness came the moment he had spoken. It was her eyes that did it. For the first time since he had first seen her, her eyes struck him like a blow. Blue eyes, and steady. So steady. Not the steady frankness of honesty. But steady—like dead eyes.

A chill grew on Leigh, a special, extra chill, adding to the ice that was already there inside him; and the unholy thought came that this was a dead woman—artificially kept alive by the blood and *life* of dead men and women.

She smiled, but the bleakness remained in those cold fish eyes. No smile, no warmth could ever bring light to that chill, beautiful countenance. But she smiled the form of a smile, and she said, "We Dreeghs live a hard, lonely life. So lonely that sometimes I cannot help thinking our struggle to remain alive is a blind, mad thing. We're what we are through no fault of our own. It happened during an interstellar flight that took place a million years ago—"

She stopped, almost hopelessly. "It seems longer. It must be longer. I've really lost track."

She went on, suddenly grim, as if the memory, the very telling, brought a return of horror: "We were among several thousand holidayers who were caught in the gravitational pull of a sun, afterward called the Dreegh sun.

"Its rays, immensely dangerous to human life, infected us all. It was discovered that only continuous blood transfusions, and the life force of other human beings, could save us. For a while we received donations; then the government decided to have us destroyed as hopeless incurables.

"We were all young, terribly young and in love with life; some hundreds of us had been expecting the sentence, and we still had friends in the beginning. We escaped, and we've been fighting ever since to stay alive."

And still he could feel no sympathy. It was odd, for all the thoughts she undoubtedly wanted him to have, came. Picture of a bleak, endless existence in spaceships, staring out into the perpetual night; all life circumscribed by the tireless, abnormal needs of bodies gone mad from ravenous disease.

It was all there, all the emotional pictures. But no emotions came. She was too cold; the years and the devil's hunt had stamped her soul and her eyes and her face.

And besides, her body seemed tenser now, leaning toward him, bending forward closer, closer, till he could hear her slow, measured breathing. Even her eyes suddenly held the vaguest inner light—her whole being quivered with the chill tensivity of her purpose; when she spoke, she almost breathed the words:

"I want you to kiss me, and don't be afraid. I shall keep you alive for days, but I must have response, not passivity. You're a bachelor, at least thirty. You won't have any more morals about that matter than I. But you must let your whole body yield."

He didn't believe it. Her face hovered six inches above his; and there was such a ferocity of suppressed eagerness in her that it could only mean death.

Her lips were pursed, as if to suck, and they quivered with a strange, tense, trembling desire, utterly unnatural, almost obscene. Her nostrils dilated at every breath—and no normal woman who had kissed as often as she must have in all her years could feel like that, if that was all she expected to get.

"Quick!" she said breathlessly. "Yield, yield!"

Leigh scarcely heard; for that other mind that had been lingering in his brain, surged forward in its incredible way. He heard himself say, "I'll trust your promise because I can't resist such an appeal. You can kiss your head off. I guess I can stand it—"

There was a blue flash, an agonizing burning sensation that spread suddenly to every nerve of his body.

The anguish became a series of tiny pains, like small needles piercing a thousand bits of his flesh. Tingling, writhing a little, amazed that he was still alive, Leigh opened his eyes.

He felt a wave of purely personal surprise.

The woman lay slumped, lips half twisted off of his, body collapsed hard across his chest. And the mind, that blazing mind was there, watching—as the tall figure of the Dreegh man sauntered into the room, stiffened, and then darted forward.

He jerked her limp form into his arms. There was the same kind of blue flash as their lips met, from the man to the woman. She stirred finally, moaning. He shook her brutally.

"You wretched fool!" he raged. "How did you let a thing like that happen? You would have been dead in another minute, if I hadn't come along."

"I—don't—know." Her voice was thin and old. She sank down to the floor at his feet, and slumped there like a tired old woman. Her blonde hair straggled, and looked curiously faded. "I don't know, Jeel. I tried to get his life force, and he got mine instead. He—"

She stopped. Her blue eyes widened. She staggered to her feet. "Jeel, he must be a spy. No human being could do a thing like that to me.

"Jeel"—there was sudden terror in her voice—"Jeel, get out of this room. Don't you realize? He's got my energy in him. He's lying there now, and whatever has control of him has my energy to work with—"

"All right, all right." He patted her fingers. "I assure you he's only a human being. And he's got your energy. You made a mistake, and the flow went the wrong way. But it would take much more than that for *anyone* to use a human body successfully against us. So—"

"You don't understand!"

Her voice shook. "Jeel, I've been cheating. I don't know what got into me, but I couldn't get enough life force. Every time I was able, during the four times we stayed on Earth, I sneaked out.

"I caught men on the street. I don't know exactly how many because I dissolved their bodies after I was through with them. But there were dozens. And he's got all the energy I collected, enough for scores of years, enough for—don't you see?—enough for *them*."

"My dear!" The Dreegh shook her violently, as a doctor would an hysterical woman. "For a million years, the great ones of Galactic have ignored us and—"

He paused. A black frown twisted his long face. He whirled like the tiger man he was, snatching at his gun—as Leigh stood up.

The man Leigh was no longer surprised at—anything. At the way the hard cords fell rotted from his wrists and legs. At the way the Dreegh froze rigid after one look into his eyes. For the first shock of the tremendous, the almost cataclysmic, truth was already in him.

"There is only one difference," said Leigh in a voice so vibrant that the top of his head shivered from the unaccus-

tomed violence of sound. "This time there are two hundred twenty-seven Dreegh ships gathered in one concentrated area. The rest—and our records show only a dozen others—we can safely leave to our police patrols."

The Great Galactic, who had been William Leigh, smiled darkly and walked toward his captives. "It has been a most interesting experiment in deliberate splitting of personality. Three years ago, our time manipulators showed this opportunity of destroying the Dreeghs, who hitherto had escaped by reason of the vastness of our galaxy.

"And so I came to Earth, and here built up the character of William Leigh, reporter, complete with family and past history. It was necessary to withdraw into a special compartment of the brain some nine-tenths of my mind, and to drain completely an equal percentage of life energy.

"That was the difficulty. How to replace that energy in sufficient degree at the proper time, without playing the role of vampire. I constructed a number of energy caches, but naturally at no time had we been able to see all the future. We could not see the details of what was to transpire aboard this ship, or in my hotel room that night you came, or under Constantine's restaurant.

"Besides, if I had possessed full energy as I approached this ship, your spy ray would have registered it; and you would instantly have destroyed my small automobile-spaceship.

"My first necessity, accordingly, was to come to the meteorite, and obtain an initial control over my own body through the medium of what my Earth personality called the 'blackness' room.

"That Earth personality offered unexpected difficulties. In three years it had gathered momentum as a personality, and that impetus made it necessary to repeat a scene with Patricia Ungarn, and to appear directly as another conscious mind, in order to convince Leigh that he must yield. The rest of course was a matter of gaining additional life energy after boarding your ship, which"—he bowed slightly at the muscularly congealed body of the woman—"which she supplied me.

"I have explained all this because of the fact that a mind will accept complete control only if full understanding of—defeat—is present. I must finally inform you, therefore, that you are to remain alive for the next few days, during which time you will assist me in making personal contact with your friends."

He made a gesture of dismissal: "Return to your normal existence. I have still to coordinate my two personalities completely, and that does not require your presence."

The Dreeghs went out blank-eyed, almost briskly; and the two minds in one body were—alone!

For Leigh, the Leigh of Earth, the first desperate shock was past. The room was curiously dim, as if he was staring out through eyes that were no longer—his!

He thought, with a horrible effort at self-control: "I've got to fight. Some *thing* is trying to possess my body. All the rest is lie."

A soothing mind-pulsation stole into the shadowed chamber where his—self—was cornered:

"No lie, but wondrous truth. You have not seen what the Dreeghs saw and felt, for you are inside this body, and know not that it has come marvelously *alive*, unlike anything that your petty dreams on Earth could begin to conceive. You must accept your high destiny, else the sight of your own body will be a terrible thing to you. Be calm, be braver than you've ever been, and pain will turn to joy."

Calm came out. His mind quivered in its dark corner, abnormally conscious of strange and unnatural pressures that pushed in at it like winds out of unearthly night. For a moment of terrible fear, it funked that pressing night, then forced back to sanity, and had another thought of its own, a grimly cunning thought:

The devilish interloper was arguing. Could that mean—his mind rocked with hope—that coordination was impossible without *his* yielding to clever persuasion?

Never would he yield.

"Think," whispered the alien mind, "think of being one valuable facet of a mind with an I. Q. 1200, think of yourself as having played a role; and now you are returning to normalcy, a normalcy of unlimited power. You have been an actor completely absorbed in your role, but the play is over; you are alone in your dressing room removing the grease paint; your mood of the play is fading, fading, fading—"

"Go to hell!" said William Leigh, loudly. "I'm William Leigh, I. Q. 112, satisfied to be just what I am. I don't give a damn whether you built me up from the component elements of your brain, or whether I was born normally. I can just see what you're trying to do with that hypnotic suggestion stuff,

but it isn't working. I'm here, I'm myself, and I stay myself. Go find yourself another body, if you're so smart."

Silence settled where his voice had been; and the emptiness, the utter lack of sound brought a sharp twinge of fear greater than that which he had had before he spoke.

He was so intent on that inner struggle that he was not aware of outer movement until—

With a start he grew aware that he was staring out of a port window. Night spread there, the living night of space.

A trick, he thought in an agony of fear; a trick somehow designed to add to the corroding power of hypnotism.

A trick! He tried to jerk back—and, terrifyingly, couldn't. His body wouldn't move. Instantly, then, he tried to speak, to crash through that enveloping blanket of unholy silence. But no sound came.

Not a muscle, nor a finger stirred; not a single nerve so much as trembled.

He was alone.

Cut off in his little corner of brain.

Lost.

Yes, lost, came a strangely pitying sibilation of thought, lost to a cheap, sordid existence, lost to a life whose end is visible from the hour of birth, lost to a civilization that has already had to be saved from itself a thousand times. Even you, I think, can see that all this is lost to you forever—

Leigh thought starkly: The *thing* was trying by a repetition of ideas, by showing evidence of defeat, to lay the foundations of further defeat. It was the oldest trick of simple hypnotism for simple people. And he couldn't let it work—

You have, urged the mind inexorably, accepted the fact that you were playing a role; and now you have recognized our oneness, and are giving up the role. The proof of this recognition on your part is that you have yielded control of—our—body.

—Our body, *our* body, OUR body—

The words re-echoed like some Gargantuan sound through his brain, then merged swiftly into that calm, other-mind pulsation.

—Concentration. All intellect derives from capacity to concentrate; and, progressively, the body itself shows *life*, reflects and focuses that gathering, vaulting power.

—One more step remains: You must see—

.. Amazingly, then, he was staring into a mirror. Where it had come from, he had no memory. It was there in front of

him, where, an instant before, had been a black porthole—and there was an image in the mirror, shapeless at first to his blurred vision.

Deliberately—he felt the enormous deliberateness—the vision was cleared for him. He *saw*—and then he didn't.

His brain wouldn't look. It twisted in a mad desperation, like a body buried alive, and briefly, horrendously conscious of its fate. Insanely, it fought away from the blazing thing in the mirror. So awful was the effort, so titanic the fear, that it began to gibber mentally, its consciousness to whirl dizzily, like a wheel spinning faster, faster—

The wheel shattered into ten thousand aching fragments. Darkness came, blacker than Galactic night. And there was—
Oneness!

Astounding,

June

by Hal Clement (1922-)

Hal Clement (Harry Clement Stubbs) has taught science at the secondary school level all of his adult life and he knows his subject thoroughly. The percentage of science fiction writers who write convincingly about the technical details of scientific extrapolation is small indeed—the so-called “hard” sf writers are a tiny and rather exclusive club, and Hal Clement would certainly have to be considered one of the pioneering founders of this organization. His reputation rests on his novels, especially Mission of Gravity (1954), Cycle of Fire (1957), and Iceworld (1953) His 1950 novel, Needle, was one of the first successful fusions of the sf and mystery genres.

“Proof” is one of very rare stories that portray intelligent life on the Sun, and it was Hal Clement’s first published fiction.

(I’m always afraid to describe Harry because I have the distinct feeling nobody will believe me. To begin with, he’s highly intelligent, but we expect that of a science fiction writer. He knows his science thoroughly, at least as well as anyone in the field. He doesn’t smoke, he doesn’t drink, I’ve never heard him use bad language, or raise his voice, or say anything unkind. He’s quiet, honest, helpful. Oh, heck, go through the list of virtues a boy scout is supposed to have, and he has them all. And here’s the most unbelievable thing—with all that virtue, he manages to be so unobtrusive about it that I don’t think he has an enemy in the world. —I. A.

Kron held his huge freighter motionless, feeling forward for outside contact. The tremendous interplay of magnetic and electrostatic fields just beyond the city's edge was as clearly perceptible to his senses as the city itself—a mile-wide disk ringed with conical field towers, stretching away behind and to each side. The ship was poised between two of the towers; immediately behind it was the field from which Kron had just taken off. The area was covered with cradles of various forms—cup-shaped receptacles which held city craft like Kron's own; long, boat-shaped hollows wherein reposed the cigarlike vessels which plied between the cities; and towering skeleton frameworks which held upright the slender double cones that hurtled across the dark, lifeless regions between stars.

Beyond the landing field was the city proper; the surface of the disk was covered with geometrically shaped buildings—cones, cylinders, prisms and hemispheres—jumbled together.

Kron could "see" all this as easily as a human being in an airplane can see New York; but no human eyes could have perceived this city, even if a man could have existed anywhere near it. The city, buildings and all, glowed a savage, white heat; and about and beyond it—a part of it, to human eyes—raged the equally dazzling incandescent gases of the solar photosphere.

The freighter was preparing to launch itself into that fiery ocean; Kron was watching the play of the artificial reaction fields that supported the city, preparatory to plunging through them at a safe moment.

There was considerable risk of being flattened against the edge of the disk if an inauspicious choice was made, but Kron was an experienced flier, and slipped past the barrier with a sudden, hurtling acceleration that would have pulped any body of flesh and bone. The outer fringe of the field flung the globe sharply downward; then it was free, and the city was dwindling above them.

Kron and four others remained at their posts; the rest of the crew of thirty relaxed, their spherical bodies lying passive in the cuplike rests distributed through the ship, bathing in the fierce radiance on which those bodies fed, and which was continually streaming from a three-inch spheroid at the cen-

ter of the craft. That an artificial source of energy should be needed in such an environment may seem strange, but to these creatures the outer layers of the sun were far more inhospitable to life than is the stratosphere of Earth to human beings.

They had evolved far down near the solar core, where pressures and temperatures were such that matter existed in the "collapsed" state characteristic of the entire mass of white dwarf stars. Their bodies were simply constructed: a matrix of close-packed electrons—really an unimaginably dense electrostatic field, possessing quasi-solid properties—surrounded a core of neutrons, compacted to the ultimate degree. Radiation of sufficient energy, falling on the "skin," was stabilized, altered to the pattern and structure of neutrons; the tiny particles of neutronium which resulted were borne along a circulatory system—of magnetic fields, instead of blood—to the nucleus, where it was stored.

The face had evolved to the point where no material appendages were needed. Projected beams and fields of force were their limbs, powered by the annihilation of some of their own neutron substance. Their strange senses gave them awareness not only of electromagnetic radiation, permitting them to "see" in a more or less normal fashion, but also of energies still undreamed of by human scientists. Kron, now hundreds of miles below the city, was still dimly aware of its location, though radio waves, light, and gamma rays were all hopelessly fogged in the clouds of free electrons. At his goal, far down in the solar interior, "seeing" conditions would be worse—anything more than a few hundred yards distant would be quite undetectable even to him.

Poised beside Kron, near the center of the spheroidal Sunship, was another being. Its body was ovoid in shape, like that of the Solarian, but longer and narrower, while the ends were tipped with pyramidal structures of neutronium, which projected through the "skin." A second, fainter static aura outside the principal surface enveloped the creature; and as the crew relaxed in their cups, a beam of energy from this envelope impinged on Kron's body. It carried a meaning, transmitting a clear thought from one being to the other.

"I still find difficulty in believing my senses," stated the stranger. "My own worlds revolve about another which is somewhat similar to this; but such a vast and tenuous atmosphere is most unlike conditions at home. Have you ever been away from Sol?"

"Yes," replied Kron, "I was once on the crew of an interstellar projectile. I have never seen your star, however; my acquaintance with it is entirely through hearsay. I am told it consists almost entirely of collapsed matter, like the core of our own; but there is practically no atmosphere. Can this be so? I should think, at the temperature necessary for life, gases would break free of the core and form an envelope."

"They tend to do so, of course," returned the other, "but our surface gravity is immeasurably greater than anything you have here; even your core pull is less, since it is much less dense than our star. Only the fact that our worlds are small, thus causing a rapid diminution of gravity as one leaves them, makes it possible to get a ship away from them at all; atoms, with only their original velocities, remain within a few miles of the surface.

"But you remind me of my purpose on this world—to check certain points of a new theory concerning the possible behavior of aggregations of normal atoms. That was why I arranged a trip on your flier; I have to make density, pressure, temperature, and a dozen other kinds of measurements at a couple of thousand different levels, in your atmosphere. While I'm doing it, would you mind telling me why you make these regular trips—and why, for that matter, you live so far above your natural level? I should think you would find life easier below, since there would be no need to remain in sealed buildings or to expend such a terrific amount of power in supporting your cities."

Kron's answer was slow.

"We make the journeys to obtain neutronium. It is impossible to convert enough power from the immediate neighborhood of the cities to support them; we must descend periodically for more, even though our converters take so much as to lower the solar temperature considerably for thousands of miles around each city.

"The trips are dangerous—you should have been told that. We carry a crew of thirty, when two would be enough to man this ship, for we must fight, as well as fly. You spoke truly when you said that the lower regions of Sol are our natural home; but for aeons we have not dared to make more than fleeting visits, to steal the power which is life to us.

"Your little worlds have been almost completely subjugated by your people, Sirian; they never had life forms sufficiently powerful to threaten seriously your domination. But Sol, whose core alone is far larger than the Sirius B pair, did

develop such creatures. Some are vast, stupid, slow-moving or immobile; others are semi-intelligent and rapid movers; all are more than willing to ingest the ready-compacted neutronium of another living being."

Kron's tale was interrupted for a moment, as the Sirian sent a ray probing out through the ship's wall, testing the physical state of the inferno beyond. A record was made, and the Solarian resumed.

"We, according to logical theory, were once just such a race—of small intelligence, seeking the needs of life among a horde of competing organisms. Our greatest enemy was a being much like ourselves in size and power—just slightly superior in both ways. We were somewhat ahead in intelligence, and I suppose we owe them some thanks—without the competition they provided, we should not have been forced to develop our minds to their present level. We learned to cooperate in fighting them, and from that came the discovery that many of us together could handle natural forces that a single individual could not even approach, and survive. The creation of force effects that had no counterpart in nature was the next step; and, with the understanding of them, our science grew.

"The first cities were of neutronium, like those of today, but it was necessary to stabilize the neutrons with fields of energy; at core temperature, as you know, neutronium is a gas. The cities were spherical and much smaller than our present ones. For a long time, we managed to defend them.

"But our enemies evolved, too; not in intelligence, but in power and fecundity. With overspecialization of their physical powers, their mentalities actually degenerated; they became little more than highly organized machines, driven, by an age-old enmity toward our race, to seek us out and destroy us. Their new powers at last enabled them to neutralize, by brute force, the fields which held our cities in shape; and then it was that, from necessity, we fled to the wild, inhospitable upper regions of Sol's atmosphere. Many cities were destroyed by the enemy before a means of supporting them was devised; many more fell victims to forces which we generated, without being able to control, in the effort. The dangers of our present-day trips seem trivial beside those our ancestors braved, in spite of the fact that ships not infrequently fail to return from their flights. Does that answer your question?"

The Sirian's reply was hesitant. "I guess it does. You of Sol

must have developed far more rapidly than we, under that drive; your science, I know, is superior to ours in certain ways, although it was my race which first developed space flight."

"You had greater opportunities in that line," returned Kron. "Two small stars, less than a diameter apart, circling a larger one at a distance incomparably smaller than the usual interstellar interval, provided perfect ground for experimental flights; between your world and mine, even radiation requires some hundred and thirty rotations to make the journey, and even the nearest other star is almost half as far.

"But enough of this—history is considered by too many to be a dry subject. What brings you on a trip with a power flier? You certainly have not learned anything yet which you could not have been told in the city."

During the conversation, the Sirian had periodically tested the atmosphere beyond the hull. He spoke rather absently, as though concentrating on something other than his words.

"I would not be too sure of that, Solarian. My measurements are of greater delicacy than we have ever before achieved. I am looking for a very special effect, to substantiate or disprove an hypothesis which I have recently advanced—much to the detriment of my prestige. If you are interested, I might explain: laugh afterward if you care to—you will not be the first.

"The theory is simplicity itself. It has occurred to me that matter—ordinary substances like iron and calcium—might actually take on solid form, like neutronium, under the proper conditions. The normal gas, you know, consists of minute particles traveling with considerable speed in all directions. There seems to be no way of telling whether or not these atoms exert appreciable forces on one another; but it seems to me that if they were brought closely enough together, or slowed down sufficiently, some such effects might be detected."

"How, and why?" asked Kron. "If the forces are there, why should they not be detectable under ordinary conditions?"

"Tiny changes in velocity due to mutual attraction or repulsion would scarcely be noticed when the atomic speeds are of the order of hundreds of kilometers per second," returned the Sirian. "The effects I seek to detect are of a different nature. Consider, please. We know the sizes of the various atoms, from their radiations. We also know that under normal conditions, a given mass of any particular gas fills a cer-

tain volume. If, however, we surround this gas with an impenetrable container and exert pressure, that volume decreases. We would expect that decrease to be proportional to the pressure, except for an easily determined constant due to the size of the atoms, if no interatomic forces existed; to detect such forces, I am making a complete series of pressure-density tests, more delicate than any heretofore, from the level of your cities down to the neutron core of your world.

"If we could reduce the kinetic energy of the atoms—slow down their motions of translation—the task would probably be simpler; but I see no way to accomplish that. Perhaps, if we could negate nearly all of that energy, the interatomic forces would actually hold the atoms in definite relative positions, approximating the solid state. It was that somewhat injudicious and perhaps too imaginative suggestion which caused my whole idea to be ridiculed on Sirius."

The ship dropped several hundred miles in the few seconds after Kron answered; since gaseous friction is independent of change in density, the high pressures of the regions being penetrated would be no bar to high speed of flight. Unfortunately, the viscosity of a gas does increase directly as the square root of its temperature; and at the lower levels of the sun, travel would be slow.

"Whether or not our scientists will listen to you, I cannot say," said Kron finally. "Some of them are a rather imaginative crowd, I guess and none of them will ignore any data you may produce."

"I do not laugh, either. My reason will certainly interest you, as your theory intrigues me. It is the first time anyone has accounted even partly for the things that happened to us on one of my flights."

The other members of the crew shifted slightly on their cradles; a ripple of interest passed through them, for all had heard rumors and vague tales of Kron's time in the space carrier fleets. The Sirian settled himself more comfortably; Kron dimmed the central globe of radiance a trifle, for the outside temperature was now considerably higher, and began the tale.

"This happened toward the end of my career in space. I had made many voyages with the merchant and passenger vessels, had been promoted from the lowest ranks, through many rotations, to the post of independent captain. I had my own cruiser—a special long-period explorer, owned by the

Solarian government. She was shaped like our modern interstellar carriers, consisting of two cones, bases together, with the field ring just forward of their meeting point. She was larger than most, being designed to carry fuel for exceptionally long flights.

"Another cruiser, similar in every respect, was under the command of a comrade of mine, named Akro; and the two of us were commissioned to transport a party of scientists and explorers to the then newly discovered Fourth System, which lies, as you know, nearly in the plane of the solar equator, but about half again as distant as Sirius.

"We made good time, averaging nearly half the speed of radiation, and reached the star with a good portion of our hulls still unconsumed. We need not have worried about that, in any case; the star was denser even than the Sirius B twins, and neutronium was very plentiful. I restocked at once, plating my inner walls with the stuff until they had reached their original thickness, although experience indicated that the original supply was ample to carry us back to Sol, to Sirius, or to Procyon B.

"Akro, at the request of the scientists, did not refuel. Life was present on the star, as it seems to be on all stars where the atomic velocities and the density are high enough; and the biologists wanted to bring back specimens. That meant that room would be needed, and if Akro replated his walls to normal thickness, that room would be lacking—as I have mentioned, these were special long-range craft, and a large portion of their volume consisted of available neutronium.

"So it happened that the other ship left the Fourth System with a low, but theoretically sufficient, stock of fuel, and half a dozen compartments filled with specimens of alien life. I kept within detection distance at all times, in case of trouble, for some of those life forms were as dangerous as those of Sol, and, like them, all consumed neutronium. They had to be kept well under control to safeguard the very walls of the ship, and it is surprisingly difficult to make a wild beast, surrounded by food, stay on short rations.

"Some of the creatures proved absolutely unmanageable; they had to be destroyed. Others were calmed by lowering the atomic excitation of their compartments, sending them into a stupor; but the scientists were reluctant to try that in most cases, since not all of the beings could stand such treatment.

"So, for nearly four hundred solar rotations, Akro practically fought his vessel across space—fought successfully. He

managed on his own power until we were within a few hundred diameters of Sol; but I had to help him with the landing—or try to, for the landing was never made.

“It may seem strange, but there is a large volume of space in the neighborhood of this sun which is hardly ever traversed. The normal landing orbit arches high over one of the poles of rotation, enters atmosphere almost tangentially somewhere between that pole and the equator and kills as much as remains of the ship’s velocity in the outer atmospheric layers. There is a minimum of magnetic interference that way, since the flier practically coasts along the lines of force of the solar magnetic field.

“As a result, few ships pass through the space near the plane of the solar equator. One or two may have done so before us, and I know of several that searched the region later; but none encountered the thing which we found.

“About the time we would normally have started correcting our orbits for a tangential landing, Akro radiated me the information that he could not possibly control his ship any farther with the power still available to him. His walls were already so thin that radiation loss, ordinarily negligible, was becoming a definite menace to his vessel. All his remaining energy would have to be employed in keeping the interior of his ship habitable.

“The only thing I could do was to attach our ships together with an attractor beam, and make a nearly perpendicular drop to Sol. We would have to take our chances, with magnetic and electrostatic disturbances in the city-supporting fields which cover so much of the near-equatorial zones, and try to graze the nucleus of the Sun instead of its outer atmosphere, so that Akro could replenish his rapidly failing power.

“Akro’s hull was radiating quite perceptibly now; it made an easy target for an attractor. We connected without difficulty, and our slightly different linear velocities caused us to revolve slowly about each other, pivoting on the center of mass of our two ships. I cut off my driving fields, and we fell spinning toward Sol.

“I was becoming seriously worried about Akro’s chances of survival. The now-alarming energy loss through his almost consumed hull threatened to exhaust his supply long before we reached the core; and we were still more than a hundred diameters out. I could not give him any power; we were revolving about each other at a distance of about one-tenth of a solar diameter. To lessen that distance materially would

increase our speed of revolution to a point where the attractor could not overcome centrifugal force; and I had neither power nor time to perform the delicate job of exactly neutralizing our rotary momentum without throwing us entirely off course. All we could do was hope.

"We were somewhere between one hundred and one hundred fifty diameters out when there occurred the most peculiar phenomenon I have ever encountered. The plane of revolution of our two ships passed near Sol, but was nearly perpendicular to the solar equator; at the time of which I speak, Akro's ship was almost directly between my flier and the sun. Observations had just shown that we were accelerating sunward at an unexpectedly high pace, when a call came from Akro.

"'Kron! I am being pulled away from your attractor! There is a large mass somewhere near, for the pull is gravitational, but it emits no radiation that I can detect. Increase your pull, if you can; I cannot possibly free myself alone.'

"I did what I could, which was very little. Since we did not know the location of the disturbing dark body, it was impossible to tell just what I should do to avoid bringing my own or Akro's vessel too close. I think now that if I had released him immediately he would have swung clear, for the body was not large, I believe. Unfortunately, I did the opposite, and nearly lost my own ship as well. Two of my crew were throwing as much power as they could convert and handle into the attractor, and trying to hold it on the still easily visible hull of Akro's ship; but the motions of the latter were so peculiar that aiming was a difficult task. They held the ship as long as we could see it; but quite suddenly the radiations by means of which we perceived the vessel faded out, and before we could find a band which would get through, the sudden cessation of our centripetal acceleration told us that the beam had slipped from its target.

"We found that electromagnetic radiations of wavelengths in the octave above H-alpha would penetrate the interference, and Akro's hull was leaking energy enough to radiate in that band. When we found him, however, we could scarcely believe our senses; his velocity was now nearly at right angles to his former course, and his hull radiation had become far weaker. What terrific force had caused this acceleration, and what strange field was blanketing the radiation, were questions none of us could answer.

"Strain as we might, not one of us could pick up an erg of

radiant energy that might emanate from the thing that had trapped Akro. We could only watch, and endeavor to plot his course relative to our own, at first. Our ships were nearing each other rapidly, and we were attempting to determine the time and distance of closest approach, when we were startled by the impact of a communicator beam. Akro was alive! The beam was weak, very weak, showing what an infinitesimal amount of power he felt he could spare. His words were not encouraging.

"Kron! You may as well cut your attractor, if you are still trying to catch me. No power that I dare supply seems to move me perceptibly in any direction from this course. We are badly shocked, for we hit something that felt almost solid. The walls, even, are strained, and may go at any time."

"Can you perceive anything around you?" I returned. "You seem to us to be alone in space, though something is absorbing most of your radiated energy. There must be energies in the cosmos of which we have never dreamed, simply because they did not affect our senses. What do your scientists say?"

"Very little," was the answer. "They have made a few tests, but they say that anything they project is absorbed without reradiating anything useful. We seem to be in a sort of energy vacuum—it takes everything and returns nothing."

"This was the most alarming item yet. Even in free space, we had been doubtful of Akro's chances of survival; now they seemed reduced to the ultimate zero."

"Meanwhile, our ships were rapidly approaching each other. As nearly as my navigators could tell, both vessels were pursuing almost straight lines in space. The lines were nearly perpendicular but did not lie in a common plane; their minimum distance apart was about one one-thousandth of a solar diameter. His velocity seemed nearly constant, while I was accelerating sunward. It seemed that we would reach the near-intersection point almost simultaneously, which meant that my ship was certain to approach the energy vacuum much too closely. I did not dare to try to pull Akro free with an attractor; it was only too obvious that such an attempt could only end in disaster for both vessels. If he could not free himself, he was lost."

"We could only watch helplessly as the point of light marking the position of Akro's flier swept closer and closer. At first, as I have said, it seemed perfectly free in space; but as we looked, the region around it began to radiate feebly."

There was nothing recognizable about the vibrations, simply a continuous spectrum, cut off by some interference just below the H-alpha wavelength and, at the other end, some three octaves higher. As the emission grew stronger, the visible region around the stranded ship grew larger, fading into nothingness at the edges. Brighter and broader the patch of radiance grew, as we swept toward it."

That same radiance was seriously inconveniencing Gordon Aller, who was supposed to be surveying for a geological map of northern Australia. He was camped by the only water hole in many miles, and had stayed up long after dark preparing his cameras, barometer, soil kit, and other equipment for the morrow's work.

The arrangement of instruments completed, he did not at once retire to his blankets. With his back against a smooth rock, and a short, blackened pipe clenched in his teeth, he sat for some time, pondering. The object of his musing does not matter to us; though his eyes were directed heavenward, he was sufficiently accustomed to the southern sky to render it improbable that he was paying much attention to its beauties.

However that may be, his gaze was suddenly attracted to the zenith. He had often seen stars which appeared to move when near the edge of his field of vision—it is a common illusion; but this one continued to shift as he turned his eyes upward.

Not far from Achernar was a brilliant white point, which brightened as Aller watched it. It was moving slowly northward, it seemed; but only a moment was needed for the man to realize that the slowness was illusory. The thing was slashing almost vertically downward at an enormous speed, and must strike Earth not far from his camp.

Aller was not an astronomer and had no idea of astronomical distances or speeds. He may be forgiven for thinking of the object as traveling perhaps as fast as a modern fighting plane, and first appearing at a height of two or three miles. The natural conclusion from this belief was that the crash would occur within a few hundred feet of the camp. Aller paled; he had seen pictures of the Devil's Pit in Arizona.

Actually, of course, the meteor first presented itself to his gaze at a height of some eighty miles, and was then traveling at a rate of many miles per second relative to Earth. At that speed, the air presented a practically solid obstacle to its flight, and the object was forced to a fairly constant velocity

of ten or twelve hundred yards a second while still nearly ten miles from Earth's surface. It was at that point that Aller's eyes caught up with, and succeeded in focusing upon, the celestial visitor.

That first burst of light had been radiated by the frightfully compressed and heated air in front of the thing; as the original velocity departed, so did the dazzling light. Aller got a clear view of the meteor at a range of less than five miles, for perhaps ten seconds before the impact. It was still incandescent, radiating a bright cherry red; this must have been due to the loss from within, for so brief a contact even with such highly heated air could not have warmed the Sunship's neutronium walls a measurable fraction of a degree.

Aller felt the ground tremble as the vessel struck. A geyser of earth, barely visible in the reddish light of the hull, spouted skyward, to fall back seconds later with a long-drawn-out rumble. The man stared at the spot, two miles away, which was still giving off a faint glow. Were "shooting stars" as regularly shaped as that? He had seen a smooth, slender body, more than a hundred feet in length, apparently composed of two cones of unequal length, joined together at the bases. Around the longer cone, not far from the point of juncture, was a thick bulging ring; no further details were visible at the distance from which he had observed. Aller's vague recollections of meteorites, seen in various museums, brought images of irregular, clinkerlike objects before his mind's eye. What, then, could this thing be?

He was not imaginative enough to think for a moment of any possible extraterrestrial source for an aircraft; when it did occur to him that the object was of artificial origin, he thought more of some experimental machine produced by one of the more progressive Earth nations.

At the thought, Aller strapped a first-aid kit to his side and set out toward the crater, in the face of the obvious fact that nothing human could possibly have survived such a crash. He stumbled over the uneven terrain for a quarter of a mile and then stopped on a small rise of ground to examine more closely the site of the wreck.

The glow should have died by this time, for Aller had taken all of ten minutes to pick his way those few hundred yards; but the dull-red light ahead had changed to a brilliant orange radiance against which the serrated edges of the pit were clearly silhouetted. No flames were visible; whence came the increasing heat? Aller attempted to get closer, but a

wave of frightfully hot air blistered his face and hands and drove him back. He took up a station near his former camp and watched.

If the hull of the flier had been anywhere near its normal thickness, the tremendous mass of neutronium would have sunk through the hardest of rocks as though they were liquid. There was, however, scarcely more than a paper thickness of the substance at any part of the walls; and an upthrust of adamantine volcanic rock not far beneath the surface of the desert proved thick enough to absorb the Sunship's momentum and to support its still enormous weight. Consequently, the ship was covered only by a thin layer of powdered rock which had fallen back into the crater. The disturbances arising from the now extremely rapid loss of energy from Akro's ship were, as a result, decidedly visible from the surface.

The hull, though thin, was still intact; but its temperature was now far above the melting point of the surrounding rocks. The thin layer of pulverized material above the ship melted and flowed away almost instantly, permitting free radiation to the air above; and so enormous is the specific heat of neutronium that no perceptible lowering of hull temperature occurred.

Aller, from his point of observation, saw the brilliant fan of light that sprang from the pit as the flier's hull was exposed—the vessel itself was invisible to him, since he was only slightly above the level of the crater's mouth. He wondered if the impact of the "meteor" had released some pent-up volcanic energy, and began to doubt, quite justifiably, if he was at a safe distance. His doubts vanished and were replaced by certainty as the edges of the crater began to glow dull red, then bright orange, and slowly subsided out of sight. He began packing the most valuable items of his equipment, while a muted, continuous roaring and occasional heavy thuds from the direction of the pit admonished him to hasten.

When he straightened up, with the seventy-pound pack settled on his shoulders, there was simply a lake of lava where the crater had been. The fiery area spread even as he watched; and without further delay he set off on his own back trail. He could see easily by the light diffused from the inferno behind him; and he made fairly good time, considering his burden and the fact that he had not slept since the preceding night.

The rock beneath Akro's craft was, as we have said, extremely hard. Since there was relatively free escape upward

for the constantly liberated energy, this stratum melted very slowly, gradually letting the vessel sink deeper into the earth. What would have happened if Akro's power supply had been greater is problematical; Aller can tell us only that some five hours after the landing, as he was resting for a few moments near the top of a rocky hillock, the phenomenon came to a cataclysmic end.

A quivering of the earth beneath him caused the surveyor to look back toward his erstwhile camp. The lake of lava, which by this time was the better part of a mile in breadth, seemed curiously agitated. Aller, from his rather poor vantage point, could see huge bubbles of pasty lava hump themselves up and burst, releasing brilliant clouds of vapor. Each cloud illuminated earth and sky before cooling to invisibility, so that the effect was somewhat similar to a series of lightning flashes.

For a short time—certainly no longer than a quarter of a minute—Aller was able to watch as the activity increased. Then a particularly violent shock almost flung him from the hilltop, and at nearly the same instant the entire volume of molten rock fountained skyward. For an instant it seemed to hang there, a white, raging pillar of liquid and gas; then it dissolved, giving way before the savage thrust of the suddenly released energy below. A tongue of radiance, of an intensity indescribable in mere words, stabbed upward, into and through the lava, volatilizing instantly. A dozen square miles of desert glowed white, then an almost invisible violet, and disappeared in superheated gas. Around the edges of this region, great gouts of lava and immense fragments of solid rock were hurled to all points of the compass.

Radiation exerts pressure; at the temperature found in the cores of stars, that pressure must be measured in thousands of tons per square inch. It was this thrust, rather than the by no means negligible gas pressure of the boiling lava, which wrought most of the destruction.

Aller saw little of what occurred. When the lava was hurled upward, he had flung an arm across his face to protect his eyes from the glare. That act unquestionably saved his eyesight as the real flash followed; as it was, his body was seared and blistered through his clothing. The second, heavier, shock knocked his feet from under him, and he half crawled, half rolled down to the comparative shelter of the little hill. Even here, gusts of hot air almost cooked him; only the speed with which the phenomenon ended saved his life.

Within minutes, both the temblors and hot winds had ceased; and he crawled painfully to the hilltop again to gaze wonderingly at the five-mile crater, ringed by a pile of tumbled, still-glowing rock fragments.

Far beneath that pit, shards of neutronium, no more able to remain near the surface than the steel pieces of a wrecked ocean vessel can float on water, were sinking through rock and metal to a final resting place at Earth's heart.

"The glow spread as we watched, still giving no clue to the nature of the substance radiating it," continued Kron. "Most of it seemed to originate between us and Akro's ship; Akro himself said that but little energy was being lost on the far side. His messages, during that last brief period as we swept by our point of closest approach, were clear—so clear that we could almost see, as he did, the tenuous light beyond the ever-thinning walls of his ship; the light that represented but a tiny percentage of the energy being sucked from the hull surface.

"We saw, as though with his own senses, the tiny perforation appear near one end of the ship; saw it extend, with the speed of thought, from one end of the hull to the other, permitted the free escape of all the energy in a single instant; and, from our point of vantage, saw the glowing area where the ship had been suddenly brightened, blazing for a moment almost as brightly as a piece of sun matter.

"In that moment, every one of us saw the identifying frequencies as the heat from Akro's disrupted ship raised the substance which had trapped him to an energy level which permitted atomic radiation. Every one of us recognized the spectra of iron, of calcium, of carbon, and of silicon and a score of the other elements—Sirian, I tell you that that 'trapping field' was *matter*—matter in such a state that it could not radiate, and could offer resistance to other bodies in exactly the fashion of a solid. I thought, and have always thought, that some strange field of force held the atoms in their 'solid' positions; you have convinced me that I was wrong. The 'field' was the sum of the interacting atomic forces which you are trying to detect. The energy level of that material body was so low that those forces were able to act without interference. The condition you could not conceive of reaching artificially actually exists in nature!"

"You go too fast, Kron," responded the Sirian. "Your first idea is far more likely to be the true one. The idea of un-

known radiant or static force fields is easy to grasp; the one you propose in its place defies common sense. My theories called for some such conditions as you described, granted the one premise of a sufficiently low energy level; but a place in the real Universe so devoid of energy as to absorb that of a well-insulated interstellar flier is utterly inconceivable. I have assumed your tale to be true as to details, though you offer neither witnesses nor records to support it; but I seem to have heard that you have somewhat of a reputation as an entertainer, and you seem quick-witted enough to have woven such a tale on the spot, purely from the ideas I suggested. I compliment you on the tale, Kron; it was entrancing; but I seriously advise you not to make anything more out of it. Shall we leave it at that, my friend?"

"As you will," replied Kron.

NERVES

Astounding,

September

by Lester del Rey

The word "classic" is used to describe everything from old cars to basketball tournaments, and is severely abused and overused in the science fiction field. However, "Nerves" deserves the appellation because it is a terrific story and because it vividly portrays the impact of science and technology on people and society, one of the hall marks of quality science fiction. It is also a gripping story with powerful characterizations—little wonder that it had readers shaking their heads and saying, "It will be something like this." Written at the height of the secret Manhattan Project, any resemblance to what might have happened at Three-Mile Island is strictly coincidental and a figment of your imagination. Del Rey expanded the story to novel length in 1956.

(Lester is great on one-liners. I always listen to him very carefully—when we're not playing our game—for whatever I can appropriate. He said once, "The trouble with Indian philosophy is that it produced India." When someone asked him his birthday, so he could work out his astrological personality, he answered, "Observe my personality and deduce my birthday." He's one of those people who is absolutely immune to the lure of the fringe-crackpottery in science. That's why, perhaps, he is so prescient.—I.A.)

The graveled walks between the sprawling, utilitarian structures of the National Atomic Products Co., Inc., were crowded with the usual five o'clock mass of young huskies just off work or going on the extra shift, and the company cafeteria was jammed to capacity and overflowing. But they

made good-natured way for Doc Ferrel as he came out, not bothering to stop their horseplay as they would have done with any of the other half hundred officials of the company. He'd been just Doc to them too long for any need of formality.

He nodded back at them easily, pushed through, and went down the walk toward the Infirmary Building, taking his own time. When a man has turned fifty, with gray hairs and enlarged waistline to show for it, he begins to realize that comfort and relaxation are worth cultivating. Besides, Doc could see no good reason for filling his stomach with food and then rushing around in a flurry that gave him no chance to digest it. He let himself in the side entrance, palming his cigar out of long habit, and passed through the surgery to the door marked:

PRIVATE
ROGER T. FERREL
PHYSICIAN IN CHARGE

As always, the little room was heavy with the odor of stale smoke and littered with scraps of this and that. His assistant was already there, rummaging busily through the desk with the brass nerve that was typical of him; Ferrel had no objections to it, though, since Blake's rock-steady hands and unruffled brain were always dependable in a pinch of any sort.

Blake looked up and grinned confidently. "Hi, Doc. Where the deuce do you keep your cigarettes, anyway? Never mind, got 'em. . . . Ah, that's better! Good thing there's one room in this darned building where the 'No Smoking' signs don't count. You and the wife coming out this evening?"

"Not a chance, Blake." Ferrel stuck the cigar back in his mouth and settled down into the old leather chair, shaking his head. "Palmer phoned down half an hour ago to ask me if I'd stick through the graveyard shift. Seems the plant's got a rush order for some particular batch of dust that takes about twelve hours to cook, so they'll be running No. 3 and 4 till midnight or later."

"Hm-m-m. So you're hooked again. I don't see why any of us has to stick here—nothing serious ever pops up now. Look what I had today; three cases of athlete's foot—better send a memo down to the showers for extra disinfection—a guy with dandruff, four running noses, and the office boy with a sliver in his thumb! They bring everything to us except their

babies—and they'd have them here if they could—but nothing that couldn't wait a week or a month. Anne's been counting on you and the missus, Doc; she'll be disappointed if you aren't there to celebrate her sticking ten years with me. Why don't you let the kid stick it out alone tonight?"

"I wish I could, but this happens to be my job. As a matter of fact, though, Jenkins worked up an acute case of duty and decided to stay on with me tonight." Ferrel twitched his lips in a stiff smile, remembering back to the time when his waistline had been smaller than his chest and he'd gone through the same feeling that destiny had singled him out to save the world. "The kid had his first real case today, and he's all puffed up. Handled it all by himself, so he's now Dr. Jenkins, if you please."

Blake had his own memories. "Yeah? Wonder when he'll realize that everything he did by himself came from your hints? What was it, anyway?"

"Same old story—simple radiation burns. No matter how much we tell the men when they first come in, most of them can't see why they should wear three ninety-five percent efficient shields when the main converter shield cuts off all but one-tenth percent of the radiation. Somehow, this fellow managed to leave off his two inner shields and pick up a year's burn in six hours. Now he's probably back on No. 1, still running through the hundred liturgies I gave him to say and hoping we won't get him sacked."

No. 1 was the first converter around which National Atomic had built its present monopoly in artificial radioactives, back in the days when shields were still inefficient to one part in a thousand and the materials handled were milder than the modern ones. They still used it for the gentler reactions, prices of converters being what they were; anyhow, if reasonable precautions were taken, there was no serious danger.

"A tenth percent will kill; five percent thereof is one two-hundredth; five percent of that is one four-thousandth; and five percent again leaves one eighty-thousandth, safe for all but fools." Blake sing-songed the liturgy solemnly, then chuckled. "You're getting old, Doc; you used to give them a thousand times. Well, if you get the chance, you and Mrs. Ferrel drop out and say hello, even if it's after midnight. Anne's gonna be disappointed, but she ought to know how it goes. So long."

"'Night." Ferrel watched him leave, still smiling faintly.

Some day his own son would be out of medical school, and Blake would make a good man for him to start under and begin the same old grind upward. First, like young Jenkins, he'd be filled with his mission to humanity, tense and uncertain, but somehow things would roll along through Blake's stage and up, probably to Doc's own level, where the same old problems were solved in the same old way, and life settled down into a comfortable, mellow dullness.

There were worse lives, certainly, even though it wasn't like the mass of murders, kidnappings and applied miracles played up in the current movie series about Dr. Hoozis. Come to think of it, Hoozis was supposed to be working in an atomic products plant right now—but one where chrome-plated converters covered with pretty neon tubes were mysteriously blowing up every second day, and men were brought in with blue flames all over them to be cured instantly in time to utter the magic words so the hero could dash in and put out the atomic flame barehanded. Ferrel grunted and reached back for his old copy of the "Decameron."

Then he heard Jenkins out in the surgery, puttering around with quick, nervous little sounds. Never do to let the boy find him loafing back here, when the possible fate of the world so obviously hung on his alertness. Young doctors had to be disillusioned slowly, or they became bitter and their work suffered. Yet, in spite of his amusement at Jenkins' nervousness, he couldn't help envying the thin-faced young man's erect shoulders and flat stomach. Years crept by, it seemed.

Jenkins straightened out a wrinkle in his white jacket fussily and looked up. "I've been getting the surgery ready for instant use, Dr. Ferrel. Do you think it's safe to keep only Miss Dodd and one male attendant here—shouldn't we have more than the bare legally sanctioned staff?"

"Dodd's a one-man staff," Ferrel assured him. "Expecting accidents tonight?"

"No, sir, not exactly. But do you know what they're running off?"

"No." Ferrel hadn't asked Palmer; he'd learned long before that he couldn't keep up with the atomic engineering developments, and had stopped trying. "Some new type of atomic tank fuel for the army to use in its war games?"

"Worse than that, sir. They're making their first commer-

cial run of Natomic I-713 in both No. 3 and 4 converters at once."

"So? Seems to me I did hear something about that. Had to do with killing off boll weevils, didn't it?" Ferrel was vaguely familiar with the process of sowing radioactive dust in a circle outside the weevil area, to isolate the pest, then gradually moving inward from the border. Used with proper precautions, it had slowly killed off the weevil and driven it back into half the territory once occupied.

Jenkins managed to look disappointed, surprised and slightly superior without a visible change of expression. "There was an article on it in the *Natomic Weekly Ray* of last issue, Dr. Ferrel. You probably know that the trouble with Natomic I-344, which they've been using, was its half life of over four months; that made the land sowed useless for planting the next year, so they had to move very slowly. I-713 has a half life of less than a week and reached safe limits in about two months, so they'll be able to isolate whole strips of hundreds of miles during the winter and still have the land usable by spring. Field tests have been highly successful, and we've just gotten a huge order from two States that want immediate delivery."

"After their legislatures waited six months debating whether to use it or not," Ferrel hazarded out of long experience. "Hm-m-m, sounds good if they can sow enough earthworms after them to keep the ground in good condition. But what's the worry?"

Jenkins shook his head indignantly. "I'm not worried. I simply think we should take every possible precaution and be ready for any accident; after all, they're working on something new, and a half life of a week is rather strong, don't you think? Besides, I looked over some of the reaction charts in the article, and—What was that?"

From somewhere to the left of the infirmary, a muffled growl was being accompanied by ground tremors; then it gave place to a steady hissing, barely audible through the insulated walls of the building. Ferrel listened a moment and shrugged. "Nothing to worry about, Jenkins. You'll hear it a dozen times a year. Ever since the Great War when he tried to commit hara-kiri over the treachery of his people, Hokusai's been bugs about getting an atomic explosive bomb which will let us wipe out the rest of the world. Some day you'll probably see the little guy brought in here minus his head, but so far he hasn't found anything with short enough

a half life that can be controlled until needed. What about the reaction charts on I-713?"

"Nothing definite, I suppose." Jenkins turned reluctantly away from the sound, still frowning. "I know it worked in small lots, but there's something about one of the intermediate steps I distrust, sir. I thought I recognized . . . I tried to ask one of the engineers about it. He practically told me to shut up until I'd studied atomic engineering myself."

Seeing the boy's face whiten over tensed jaw muscles, Ferrel held back his smile and nodded slowly. Something funny there; of course. Jenkins' pride had been wounded, but hardly that much. Some day, he'd have to find out what was behind it. Little things like that could ruin a man's steadiness with the instruments, if he kept it to himself. Meantime, the subject was best dropped.

The telephone girl's heavily syllabized voice cut into his thoughts from the annunciator. "Dr. Ferrel. Dr. Ferrel wanted on the telephone. Dr. Ferrel, please!"

Jenkins' face blanched still further, and his eyes darted to his superior sharply. Doc grunted casually. "Probably Palmer's bored and wants to tell me all about his grandson again. He thinks that child's an all-time genius because it says two words at eighteen months."

But inside the office, he stopped to wipe his hands free of perspiration before answering; there was something contagious about Jenkins' suppressed fears. And Palmer's face on the little television screen didn't help any, though the director was wearing his usual set smile. Ferrel knew it wasn't about the baby this time, and he was right.

"'Lo, Ferrel." Palmer's heartily confident voice was quite normal, but the use of the last name was a clear sign of some trouble. "There's been a little accident in the plant, they tell me. They're bringing a few men over to the infirmary for treatment—probably not right away, though. Has Blake gone yet?"

"He's been gone fifteen minutes or more. Think it's serious enough to call him back, or are Jenkins and myself enough?"

Jenkins? Oh, the new doctor." Palmer hesitated, and his arms showed quite clearly the doodling operations of his hands, out of sight of the vision cell. "No, of course, no need to call Blake back, I suppose—not yet, anyhow. Just worry anyone who saw him coming in. Probably nothing serious."

"What is it—radiation burns, or straight accident?"

"Oh—radiation mostly—maybe accident, too. Someone got

a little careless—you know how it is. Nothing to worry about, though. You've been through it before when they opened a port too soon."

Doc knew enough about that—if that's what it was. "Sure, we can handle that, Palmer. But I thought No. 1 was closing down at five-thirty tonight. Anyhow, how come they haven't installed the safety ports on it? You told me they had, six months ago."

"I didn't say it was No. 1, or that it was a manual port. You know, new equipment for new products." Palmer looked up at someone else, and his upper arms made a slight movement before he looked down at the vision cell again. "I can't go into it now, Dr. Ferrel; accident's throwing us off schedule, you see—details piling up on me. We can talk it over later, and you probably have to make arrangements now. Call me if you want anything."

The screen darkened and the phone clicked off abruptly, just as a muffled word started. The voice hadn't been Palmer's. Ferrel pulled his stomach in, wiped the sweat off his hands again, and went out into the surgery with careful casualness. Damn Palmer, why couldn't the fool give enough information to make decent preparations possible? He was sure 3 and 4 alone were operating, and they were supposed to be foolproof. Just what had happened?

Jenkins jerked up from a bench as he came out, face muscles tense and eyes filled with a nameless fear. Where he had been sitting, a copy of the *Weekly Ray* was lying open at a chart of symbols which meant nothing to Ferrel, except for the penciled line under one of the reactions. The boy picked it up and stuck it back on a table.

"Routine accident," Ferrel reported as naturally as he could, cursing himself for having to force his voice. Thank the Lord, the boy's hands hadn't trembled visibly when he was moving the paper; he'd still be useful if surgery were necessary. Palmer had said nothing of that, of course—he'd said nothing about entirely too much. "They're bringing a few men over for radiation burns, according to Palmer. Everything ready?"

Jenkins nodded tightly. "Quite ready, sir, as much as we can be for—routine accidents at 3 and 4! . . . Isotope R. . . . Sorry, Dr. Ferrel, I didn't mean that. Should we call in Dr. Blake and the other nurses and attendants?"

"Eh? Oh, probably we can't reach Blake, and Palmer

doesn't think we need him. You might have Nurse Dodd locate Meyers—the others are out on dates by now if I know them, and the two nurses should be enough, with Jones; they're better than a flock of the others anyway." Isotope R? Ferrel remembered the name but nothing else. Something an engineer had said once—but he couldn't recall in what connection—or had Hokusai mentioned it? He watched Jenkins leave and turned back on an impulse to his office where he could phone in reasonable privacy.

"Get me Matsuura Hokusai." He stood, drumming on the table impatiently until the screen finally lighted and the little Japanese looked out of it. "Hoke, do you know what they were turning out over at 3 and 4?"

The scientist nodded slowly, his wrinkled face as expressionless as his unaccented English. "Yess, they are make I-713 for the weevil. Why you assk?"

"Nothing; just curious. I heard rumors about an Isotope R and wondered if there was any connection. Seems they had a little accident over there, and I want to be ready for whatever comes of it."

For a fraction of a second, the heavy lids on Hokusai's eyes seemed to lift, but his voice remained neutral, only slightly faster. "No connection, Dr. Ferrel, they are not make Issotope R, very much assure you. Besst you forget Issotope R. Very sorry. Dr. Ferrel, I must now see accident. Thank you for call. Good-bye." The screen was blank again, along with Ferrel's mind.

Jenkins was standing in the door, but had either heard nothing or seemed not to know about it. "Nurse Meyers is coming back," he said. "Shall I get ready for curare injections?"

"Uh—might be a good idea." Ferrel had no intention of being surprised again, no matter what the implication of the words. Curare, one of the greatest poisons, known to South American primitives for centuries and only recently synthesized by modern chemistry, was the final resort for use in cases of radiation injury that was utterly beyond control. While the infirmary stocked it for such emergencies, in the long years of Doc's practice it had been used only twice; neither experience had been pleasant. Jenkins was either thoroughly frightened or overly zealous—unless he knew something he had no business knowing.

"Seems to take them long enough to get the men here—can't be too serious, Jenkins, or they'd move faster."

"Maybe." Jenkins went on with his preparations, dissolving dried plasma in distilled, de-aerated water, without looking up. "There's the litter siren now. You'd better get washed up while I take care of the patients."

Doc listened to the sound that came in as a faint drone from outside, and grinned slightly. "Must be Beel driving; he's the only man fool enough to run the siren when the runways are empty. Anyhow, if you'll listen, it's the out trip he's making. Be at least five minutes before he gets back." But he turned into the washroom, kicked on the hot water and began scrubbing vigorously with the strong soap.

Damn Jenkins! Here he was preparing for surgery before he had any reason to suspect the need, and the boy was running things to suit himself, pretty much, as if armed with superior knowledge. Well, maybe he was. Either that, or he was simply half crazy with old wives' fears of anything relating to atomic reactions, and that didn't seem to fit the case. He rinsed off as Jenkins came in, kicked on the hot-air blast and let his arms dry, then bumped against a rod that brought out rubber gloves on little holders. "Jenkins, what's all this Isotope R business, anyway? I've heard about it somewhere—probably from Hokusai. But I can't remember anything definite."

"Naturally—there isn't anything definite. That's the trouble." The young doctor tackled the area under his fingernails before looking up; then he saw Ferrel was slipping into his surgeon's whites that had come out on a hanger, and waited until the other was finished. "R's one of the big maybe problems of atomics. Purely theoretical, and none's been made yet—it's either impossible or can't be done in small control batches, safe for testing. That's the trouble, as I said; nobody knows anything about it, except that—if it can exist—it'll break down in a fairly short time into Mahler's Isotope. You've heard of that?"

Doc had—twice. The first had been when Mahler and half his laboratory had disappeared with accompanying noise. He'd been making a comparatively small amount of the new product designed to act as a starter for other reactions. Later, Maicewicz had tackled it on a smaller scale, and that time only two rooms and three men had gone up in dust particles. Five or six years later, atomic theory had been extended to the point where any student could find why the apparently safe product decided to become pure helium and energy in approximately one billionth of a second.

"How long a time?"

"Half a dozen theories, and no real idea." They'd come out of the washrooms, finished except for their masks. Jenkins ran his elbow into a switch that turned on the ultraviolets that were supposed to sterilize the entire surgery, then looked around questioningly. "What about the supersonics?"

Ferrel kicked them on, shuddering as the bone-shaking harmonic hum indicated their activity. He couldn't complain about the equipment, at least. Ever since the last accident, when the State Congress developed ideas, there'd been enough gadgets lying around to stock up several small hospitals. The supersonics were intended to penetrate through all solids in the room, sterilizing where the UV light couldn't reach. A whistling note in the harmonics reminded him of something that had been tickling around in the back of his mind for minutes.

"There was no emergency whistle, Jenkins. Hardly seems to me they'd neglect that if it were so important."

Jenkins grunted skeptically and eloquently. "I read in the papers a few days ago where Congress was thinking of moving all atomic plants—meaning National, of course—out into the Mojave Desert. Palmer wouldn't like that . . . There's the siren again."

Jones, the male attendant, had heard it, and was already running out the fresh stretcher for the litter into the back receiving room. Half a minute later, Beel came trundling in the detachable part of the litter. "Two," he announced. "More coming up as soon as they can get to 'em, Doc."

There was blood spilled over the canvas, and a closer inspection indicated its source in a severed jugular vein, now held in place with a small safety pin that had fastened the two sides of the cut with a series of little pricks around which the blood had clotted enough to stop further loss.

Doc kicked off the supersonics with relief and indicated the man's throat. "Why wasn't I called out instead of having him brought here?"

"Hell, Doc, Palmer said bring 'em in and I brought 'em—I dunno. Guess some guy pinned up this fellow so they figured he could wait. Anything wrong?"

Ferrel grimaced. "With a split jugular, nothing that stops the bleeding's wrong, orthodox or not. How many more, and what's wrong out there?"

"Lord knows, Doc. I only drive 'em. I don't ask questions.

So long!" He pushed the new stretcher up on the carriage, went wheeling it out to the small two-wheeled tractor that completed the litter. Ferrel dropped his curiosity back to its proper place and turned to the jugular case, while Dodd adjusted her mask. Jones had their clothes off, swabbed them down hastily, and wheeled them out on operating tables into the center of the surgery.

"Plasma!" A quick examination had shown Doc nothing else wrong with the jugular case, and he made the injection quickly. Apparently the man was only unconscious from shock induced by loss of blood, and the breathing and heart action resumed a more normal course as the liquid filled out the depleted blood vessels. He treated the wound with a sulphonamide derivative in routine procedure, cleaned and sterilized the edges gently, applied clamps carefully, removed the pin, and began stitching with the complicated little motor needle—one of the few gadgets for which he had any real appreciation. A few more drops of blood had spilled, but not seriously, and the wound was now permanently sealed. "Save the pin, Dodd. Goes in the collection. That's all for this. How's the other, Jenkins?"

Jenkins pointed to the back of the man's neck, indicating a tiny bluish object sticking out. "Fragment of steel, clear into the medulla oblongata. No blood loss, but he's been dead since it touched him. What me to remove it?"

"No need—mortician can do it if they want. . . . If these are a sample, I'd guess it as a plain industrial accident, instead of anything connected with radiation."

"You'll get that, too, Doc." It was the jugular case, apparently conscious and normal except for pallor. "We weren't in the converter house. Hey, I'm all right! . . . I'll be—"

Ferrel smiled at the surprise on the fellow's face. "Thought you were dead, eh? Sure, you're all right, if you'll take it easy. A torn jugular either kills you or else it's nothing to worry about. Just pipe down and let the nurse put you to sleep, and you'll never know you got it."

"Lord! Stuff came flying out of the air-intake like bullets out of a machine gun. Just a scratch, I thought; then Jake was bawling like a baby and yelling for a pin. Blood all over the place—then here I am, good as new."

"Uh-huh." Dodd was already wheeling him off to a ward room, her grim face wrinkled into a half-quizzical expression over the mask. "Doctor said to pipe down, didn't he? Well!"

As soon as Dodd vanished, Jenkins sat down, running his

hand over his cap; there were little beads of sweat showing where the goggles and mask didn't entirely cover his face. "Stuff came flying out of the air-intake like bullets out of a machine gun," he repeated softly. "Dr. Ferrel, these two cases were outside the converter—just by-product accidents. Inside—"

"Yeah." Ferrel was picturing things himself, and it wasn't pleasant. Outside, matter tossed through the air ducts; inside—He left it hanging, as Jenkins had. "I'm going to call Blake. We'll probably need him."

II

"Give me Dr. Blake's residence—Maple 2337," Ferrel said quickly into the phone. The operator looked blank for a second, starting and then checking a purely automatic gesture toward the plugs. "Maple 2337, I said."

"I'm sorry, Dr. Ferrel, I can't give you an outside line. All trunk lines are out of order." There was a constant buzz from the board, but nothing showed in the panel to indicate whether from white inside lights or the red trunk indicators.

"But—this is an emergency, operator. I've got to get in touch with Dr. Blake!"

"Sorry, Dr. Ferrel. All trunk lines are out of order." She started to reach for the plug, but Ferrel stopped her.

"Give me Palmer, then—and no nonsense! If his line's busy, cut me in, and I'll take the responsibility."

"Very good." She snapped at her switches. "I'm sorry, emergency call from Dr. Ferrel. Hold the line and I'll reconnect you." Then Palmer's face was on the panel, and this time the man was making no attempt to conceal his expression of worry.

"What is it, Ferrel?"

"I want Blake here—I'm going to need him. The operator says—"

"Yeah," Palmer nodded tightly, cutting in. "I've been trying to get him myself, but his house doesn't answer. Any idea of where to reach him?"

"You might try the Bluebird or any of the other nightclubs around there." Damn, why did this have to be Blake's celebration night? No telling where he could be found by this time.

Palmer was speaking again. "I've already had all the night-

clubs and restaurants called, and he doesn't answer. We're paging the movie houses and theaters now—just a second. . . . Nope, he isn't there, Ferrel. Last reports, no response."

"How about sending out a general call over the radio?"

"I'd . . . I'd like to, Ferrel, but it can't be done." The manager had hesitated for a fraction of a second, but his reply was positive. "Oh, by the way, we'll notify your wife you won't be home. Operator! You there? Good, reconnect the Governor!"

There was no sense in arguing into a blank screen, Doc realized. If Palmer wouldn't put through a radio call, he wouldn't, though it had been done once before. "All trunk lines are out of order. . . . We'll notify your wife. . . . Reconnect the Governor!" They weren't even being careful to cover up. He must have repeated the words aloud as he backed out of the office, still staring at the screen, for Jenkins' face twitched into a maladjusted grin.

"So we're cut off. I knew it already; Meyers just got in with more details." He nodded toward the nurse, just coming out of the dressing room and trying to smooth out her uniform. Her almost pretty face was more confused than worried.

"I was just leaving the plant, Dr. Ferrel, when my name came up on the outside speaker, but I had trouble getting here. We're locked in! I saw them at the gate—guards with sticks. They were turning back everyone that tried to leave, and wouldn't tell why, even. Just general orders that no one was to leave until Mr. Palmer gave his permission. And they weren't going to let me back in at first. Do you suppose . . . do you know what it's all about? I heard little things that didn't mean anything, really, but—"

"I know just about as much as you do, Meyers, though Palmer said something about carelessness with one of the ports on No. 3 or 4," Ferrel answered her. "Probably just precautionary measures. Anyway, I wouldn't worry about it yet."

"Yes, Dr. Ferrel." She nodded and turned back to the front office, but there was no assurance in her look. Doc realized that neither Jenkins nor himself was a picture of confidence at the moment.

"Jenkins," he said, when she was gone, "if you know anything I don't, for the love of Mike, out with it! I've never seen anything like this around here."

Jenkins shook himself, and for the first time since he'd been there, used Ferrel's nickname. "Doc, I don't—that's why I'm in a blue funk. I know just enough to be less sure than you can be, and I'm scared as hell!"

"Let's see your hands." The subject was almost a monomania with Ferrel, and he knew it, but he also knew it wasn't unjustified. Jenkins' hands came out promptly, and there was no tremble to them. The boy threw up his arm so the sleeve slid beyond the elbow, and Ferrel nodded; there was no sweat trickling down from the armpits to reveal a worse case of nerves than showed on the surface. "Good enough, son; I don't care how scared you are—I'm getting that way myself—but with Blake out of the picture, and the other nurses and attendants sure to be out of reach, I'll need everything you've got."

"Doc?"

"Well?"

"If you'll take my word for it, I can get another nurse here—and a good one, too. They don't come any better, or any steadier, and she's not working now. I didn't expect her—well, anyhow, she'd skin me if I didn't call when we need one. Want her?"

"No trunk lines for outside calls," Doc reminded him. It was the first time he'd seen any real enthusiasm on the boy's face, and however good or bad the nurse was, she'd obviously be of value in bucking up Jenkins' spirits. "Go to it, though; right now we can probably use any nurse. Sweetheart?"

"Wife." Jenkins went toward the dressing room. "And I don't need the phone; we used to carry ultra-short-wave personal radios to keep in touch, and I've still got mine here. And if you're worried about her qualifications, she handed instruments to Bayard at Mayo's for five years—that's how I managed to get through medical school!"

The siren was approaching again when Jenkins came back, the little tense lines about his lips still there, but his whole bearing somehow steadier. He nodded. "I called Palmer, too, and he O.K.'d her coming inside on the phone without wondering how I'd contacted her. The switchboard girl has standing orders to route all calls from us through before anything else, it seems."

Doc nodded, his ear cocked toward the drone of the siren that drew up and finally ended on a sour wheeze. There was a feeling of relief from tension about him as he saw Jones

appear and go toward the rear entrance; work, even under the pressure of an emergency, was always easier than sitting around waiting for it. He saw two stretchers come in, both bearing double loads, and noted that Beel was babbling at the attendant, the driver's usually phlegmatic manner completely gone.

"I'm quitting; I'm through tomorrow! No more watching 'em drag out stiffs for me—not that way. Dunno why I gotta go back, anyhow; it won't do 'em any good to get in further, even if they can. From now on, I'm driving a truck, so help me I am!"

Ferrel let him rave on, only vaguely aware that the man was close to hysteria. He had no time to give to Beel now as he saw the raw red flesh through the visor of one of the armor suits. "Cut off what clothes you can, Jones," he directed. "At least get the shield suits off them. Tannic acid ready, nurse?"

"Ready." Meyers answered together with Jenkins, who was busily helping Jones strip off the heavily armored suits and helmets.

Ferrel kicked on the supersonics again, letting them sterilize the metal suits—there was going to be no chance to be finicky about asepsis; the supersonics and ultraviolet tubes were supposed to take care of that, and they'd have to do it, to a large extent, little as he liked it. Jenkins finished his part, dived back for fresh gloves, with a mere cursory dipping of his hands into antiseptic and rinse. Dodd followed him, while Jones wheeled three of the cases into the middle of the surgery, ready for work; the other had died on the way in.

It was going to be messy work, obviously. Where metal from the suits had touched, or come near touching, the flesh was burned—crisped, rather. And that was merely a minor part of it, as was the more than ample evidence of major radiation burns, which had probably not stopped at the surface, but penetrated through the flesh and bones into the vital interior organs. Much worse, the writhing and spasmodic muscular contractions indicated radioactive matter that had been forced into the flesh and was acting directly on the nerves controlling the motor impulses. Jenkins looked hastily at the twisting body of his case, and his face blanched to a yellowish white; it was the first real example of the full possibilities of an atomic accident he'd seen.

"Curare," he said finally, the word forced out, but level. Meyers handed him the hypodermic and he inserted it, his

hand still steady—more than normally steady, in fact, with that absolute lack of movement that can come to a living organism only under the stress of emergency. Ferrel dropped his eyes back to his own case, both relieved and worried.

From the spread of the muscular convulsions, there could be only one explanation—somehow, radioactives had not only worked their way through the air grills, but had been forced through the almost airtight joints and sputtered directly into the flesh of the men. Now they were sending out radiations into every nerve, throwing aside the normal orders from the brain and spinal column, setting up anarchic orders of their own that left the muscles to writhe and jerk, one against the other, without order or reason, or any of the normal restraints the body places upon itself. The closest parallel was that of a man undergoing metrazol shock for schizophrenia, or a severe case of strychnine poisoning. He injected curare carefully, metering out the dosage according to the best estimate he could make, but Jenkins had been acting under a pressure that finished the second injection as Doc looked up from his first. Still, in spite of the rapid spread of the drug, some of the twitching went on.

“Curare,” Jenkins repeated, and Doc tensed mentally; he’d still been debating whether to risk the extra dosage. But he made no counter-order, feeling slightly relieved this time at having the matter taken out of his hands; Jenkins went back to work, pushing up the injections to the absolute limit of safety, and slightly beyond. One of the cases had started a weird minor moan that hacked on and off as his lungs and vocal cords went in and out of synchronization, but it quieted under the drug, and in a matter of minutes the three lay still, breathing with the shallow flaccidity common to curare treatment. They were still moving slightly, but where before they were perfectly capable of breaking their own bones in uncontrolled efforts, now there was only motion similar to a man with a chill.

“God bless the man who synthesized curare,” Jenkins muttered as he began cleaning away damaged flesh, Meyers assisting.

Doc could repeat that; with the older, natural product, true standardization and exact dosage had been next to impossible. Too much, and its action on the body was fatal; the patient died from “exhaustion” of his chest muscles in a matter of minutes. Too little was practically useless. Now that the dan-

ger of self-injury and fatal exhaustion from wild exertion was over, he could attend to such relatively unimportant things as the agony still going on—curare had no particular effect on the sensory nerves. He injected neo-heroin and began cleaning the burned areas and treating them with the standard tannic-acid routine, first with a sulphonamide to eliminate possible infection, glancing up occasionally at Jenkins.

He had no need to worry, though; the boy's nerves were frozen into an unnatural calm that still pressed through with a speed Ferrel made no attempt to equal, knowing his work would suffer for it. At a gesture, Dodd handed him the little radiation detector, and he began hunting over the skin, inch by inch, for the almost microscopic bits of matter; there was no hope of finding all now, but the worst deposits could be found and removed; later, with more time, a final probing could be made.

"Jenkins," he asked, "how about I-713's chemical action? Is it basically poisonous to the system?"

"No. Perfectly safe except for radiation. Eight in the outer electron ring, chemically inert."

That, as least, was a relief. Radiations were bad enough in and of themselves, but when coupled with metallic poisoning, like the old radium or mercury poisoning, it was even worse. The small colloiddally fine particles of I-713 in the flesh would set up their own danger signal, and could be scraped away in the worst cases; otherwise, they'd probably have to stay until the isotope exhausted itself. Mercifully, its half-life was short, which would decrease the long hospitalization and suffering of the men.

Jenkins joined Ferrel on the last patient, replacing Dodd at handing instruments. Doc would have preferred the nurse, who was used to his little signals, but he said nothing, and was surprised to note the efficiency of the boy's cooperation. "How about the breakdown products?" he asked.

"I-713? Harmless enough, mostly, and what isn't harmless isn't concentrated enough to worry about. That is, if it's still I-713. Otherwise—"

Otherwise, Doc finished mentally, the boy meant there'd be no danger from poisoning, at least. Isotope R, with an uncertain degeneration period, turned into Mahler's Isotope, with a complete breakdown in a billionth of a second. He had a fleeting vision of men, filled with a fine dispersion of that, suddenly erupting over their body with a violence that could never be described; Jenkins must have been thinking the same

thing. For a few seconds, they stood there, looking at each other silently, but neither chose to speak of it. Ferrel reached for the probe, Jenkins shrugged, and they went on with their work and their thoughts.

It was a picture impossible to imagine, which they might or might not see; if such an atomic blowup occurred, what would happen to the laboratory was problematical. No one knew the exact amount Maicewicz had worked on, except that it was the smallest amount he could make, so there could be no good estimate of the damage. The bodies on the operating tables, the little scraps of removed flesh containing the minute globules of radioactive, even the instruments that had come in contact with them, were bombs waiting to explode. Ferrel's own fingers took on some of the steadiness that was frozen in Jenkins as he went about his work, forcing his mind onto the difficult labor at hand.

It might have been minutes or hours later when the last dressing was in place and the three broken bones of the worst case were set. Meyers and Dodd, along with Jones, were taking care of the men, putting them into the little wards, and the two physicians were alone, carefully avoiding each other's eyes, waiting without knowing exactly what they expected.

Outside, a droning chug came to their ears, and the thump of something heavy moving over the runways. By common impulse they slipped to the side door and looked out, to see the rear end of one of the electric tanks moving away from them. Night had fallen some time before, but the gleaming lights from the big towers around the fence made the plant stand out in glaring detail. Except for the tank moving away, though, other buildings cut off their view.

Then, from the direction of the main gate, a shrill whistle cut the air and there was the sound of men's voices, though the words were indistinguishable. Sharp, crisp syllables followed, and Jenkins nodded slowly to himself. "Ten'll get you a hundred," he began, "that— Uh, no use betting. It is."

Around the corner a squad of men in state militia uniform marched briskly, bayoneted rifles on their arms. With efficient precision, they spread out under a sergeant's direction, each taking a post before the door of one of the buildings, one approaching the place where Ferrel and Jenkins stood.

"So that's what Palmer was talking to the Governor about," Ferrel muttered. "No use asking them questions, I suppose; they know less than we do. Come on inside where

we can sit down and rest. Wonder what good the militia can do here—unless Palmer's afraid someone inside's going to crack and cause trouble."

Jenkins followed him back to the office and accepted a cigarette automatically as he flopped back into a chair. Doc was discovering just how good it felt to give his muscles and nerves a chance to relax, and realizing that they must have been far longer in the surgery than he had thought. "Care for a drink?"

"Uh—is it safe, Doc? We're apt to be back in there any minute."

Ferrel pulled a grin onto his face and nodded. "It won't hurt you—we're just enough on edge and tired for it to be burned up inside for fuel instead of reaching our nerves. Here." It was a generous slug of rye he poured for each, enough to send an almost immediate warmth through them, and to relax their overtensed nerves. "Wonder why Beel hasn't been back long ago?"

"That tank we saw probably explains it; it got too tough for the men to work in just their suits, and they've had to start excavating through the converters with the tanks. Electric, wasn't it, battery powered? . . . So there's enough radiation loose out there to interfere with atomic-powered machines, then. That means whatever they're doing is tough and slow work. Anyhow, it's more important that they damp the action than get the men out, if they only realize it—Sue!"

Ferrel looked up quickly to see the girl standing there, already dressed for surgery, and he was not too old for a little glow of appreciation to creep over him. No wonder Jenkins' face lighted up. She was small, but her figure was shaped like that of a taller girl, not in the cute or pert lines usually associated with shorter women, and the serious competence of her expression hid none of the liveliness of her face. Obviously she was several years older than Jenkins, but as he stood up to greet her, her face softened and seemed somehow youthful beside the boy's as she looked up.

"You're Dr. Ferrel?" she asked, turning to the older man. "I was a little late—there was some trouble at first about letting me in—so I went directly to prepare before bothering you. And just so you won't be afraid to use me, my credentials are all here."

She put the little bundle on the table, and Ferrel ran through them briefly; it was better than he'd expected. Technically she wasn't a nurse at all, but a doctor of medicine, a

so-called nursing doctor; there'd been the need for assistants midway between doctor and nurse for years, having the general training and abilities of both, but only in the last decade had the actual course been created, and the graduates were still limited to a few. He nodded and handed them back.

"We can use you, Dr.—"

"Brown—professional name, Dr. Ferrel. And I'm used to being called just Nurse Brown."

Jenkins cut in on the formalities. "Sue, is there any news outside about what's going on here?"

"Rumors, but they're wild, and I didn't have a chance to hear many. All I know is that they're talking about evacuating the city and everything within fifty miles of here, but it isn't official. And some people were saying the Governor was sending in troops to declare martial law over the whole section, but I didn't see any except here."

Jenkins took her off, then, to show her the Infirmary and introduce her to Jones and the two other nurses, leaving Ferrel to wait for the sound of the siren again, and to try putting two and two together to get sixteen. He attempted to make sense out of the article in the *Weekly Ray*, but gave it up finally; atomic theory had advanced too far since the sketchy studies he'd made, and the symbols were largely without meaning to him. He'd have to rely on Jenkins, it seemed. In the meantime, what was holding up the litter? He should have heard the warning siren long before.

It wasn't the litter that came in next, though, but a group of five men, two carrying a third, and a fourth supporting the fifth. Jenkins took the carried man over, Brown helping him; it was similar to the former cases, but without the actual burns from contact with hot metal. Ferrel turned to the men.

"Where's Beel and the litter?" He was inspecting the supported man's leg as he asked, and began work on it without moving the fellow to a table. Apparently a lump of radioactive matter the size of a small pea had been driven half an inch into the flesh below the thigh, and the broken bone was the result of the violent contractions of the man's own muscles under the stimulus of the radiation. It wasn't pretty. Now, however, the strength of the action had apparently burned out the nerves around, so the leg was comparatively limp and without feeling; the man lay watching, relaxed on the bench in a half-comatose condition, his eyes popping out and his lips twisted into a sick grimace, but he did not flinch

as the wound was scraped out. Ferrel was working around a small leaden shield, his arms covered with heavily leaded gloves, and he dropped the scraps of flesh and isotope into a box of the same metal.

"Beel—he's out of this world, Doc," one of the others answered when he could tear his eyes off the probing. "He got himself blotto, somehow, and wrecked the litter before he got back. Couldn't take it, watching us grapple 'em out—and we hadda go after 'em without a drop of hooch!"

Ferrel glanced at him quickly, noticing Jenkins' head jerk around as he did so. "You were getting them out? You mean you didn't come from in there?"

"Heck, no, Doc. Do we look that bad? Them two got it when the stuff decided to spit on 'em clean through their armor. Me, I got me some nice burns, but I ain't complaining—I got a look at a couple of stiffes, so I'm kicking about nothing!"

Ferrel hadn't noticed the three who had traveled under their own power, but he looked now, carefully. They were burned, and badly, by radiations, but the burns were still new enough not to give them too much trouble, and probably what they'd just been through had temporarily deadened their awareness of pain, just as a soldier on the battlefield may be wounded and not realize it until the action stops. Anyway, atomjacks were not noted for sissiness.

"There's almost a quart in the office there on the table," he told them. "One good drink apiece—no more. Then go up front and I'll send Nurse Brown in to fix up your burns as well as can be for now." Brown could apply the unguents developed to heal radiation burns as well as he could, and some division of work that would relieve Jenkins and himself seemed necessary. "Any chance of finding any more living men in the converter housings?"

"Maybe. Somebody said the thing let out a groan half a minute before it popped, so most of 'em had a chance to duck into the two safety chambers. Figure on going back there and pushing tanks ourselves unless you say no; about half an hour's work left before we can crack the chambers, I guess, then we'll know."

"Good. And there's no sense in sending in every man with a burn, or we'll be flooded here; they can wait and it looks as if we'll have plenty of serious stuff to care for. Dr. Brown, I guess you're elected to go out with the men—have one of them drive the spare litter Jones will show you. Salve down

all the burn cases, put the worst ones off duty, and just send in the ones with the jerks. You'll find my emergency kit in the office, there. Someone has to be out there to give first aid and sort them out—we haven't room for the whole plant in here."

"Right, Dr. Ferrel." She let Meyers replace her in assisting Jenkins, and was gone briefly to come out with his bag. "Come on, you men. I'll hop the litter and dress down your burns on the way. You're appointed driver, mister. Somebody should have reported that Beel person before, so the litter would be out there now."

The spokesman for the others upended the glass he'd filled, swallowed, gulped, and grinned down at her. "O. K., doctor, only out there you ain't got time to think—you gotta do. Thanks for the shot, Doc, and I'll tell Hoke you're appointing her out there."

They filed out behind Brown as Jones went out to get the second litter, and Doc went ahead with the quick-setting plastic cast for the broken leg. Too bad there weren't more of those nursing doctors; he'd have to see Palmer about it after this was over—if Palmer and he were still around. Wonder how the men in the safety chambers about which he'd completely forgotten, would make out? There were two in each converter housing, designed as an escape for the men in case of accident, and supposed to be proof against almost anything. If the men had reached them, maybe they were all right; he wouldn't have taken a bet on it, though. With a slight shrug, he finished his work and went over to help Jenkins.

The boy nodded down at the body on the table, already showing extensive scraping and probing. "Quite a bit of spitting clean through the armor," he commented. "These words were just a little too graphic for me. I-713 couldn't do that."

"Hm-m-m." Doc was in no mood to quibble on the subject. He caught himself looking at the little box in which the stuff was put after they worked what they could out of the flesh, and jerked his eyes away quickly. Whenever the lid was being dropped, a glow could be seen inside. Jenkins always managed to keep his eyes on something else.

They were almost finished when the switchboard girl announced a call, and they waited to make the few last touches before answering, then filed into the office together. Brown's face was on the screen, smudged and with a spot of rouge

standing out on each cheek. Another smudge appeared as she brushed the auburn hair out of her eyes with the back of her wrist.

"They've cracked the converter safety chambers, Dr. Ferrel. The north one held up perfectly, except for the heat and a little burn, but something happened in the other; oxygen valve stuck, and all are unconscious, but alive. Magma must have sprayed through the door, because sixteen or seventeen have the jerks, and about a dozen are dead. Some others need more care than I can give—I'm having Hokusai delegate men to carry those the stretchers won't hold, and they're all piling up on you in a bunch right now!"

Ferrel grunted and nodded. "Could have been worse, I guess. Don't kill yourself out there, Brown."

"Same to you." She blew Jenkins a kiss and snapped off, just as the whine of the litter siren reached their ears.

In the surgery again, they could see a truck showing behind it, and men lifting out bodies in apparently endless succession.

"Get their armor off, somehow, Jones—grab anyone else to help you that you can. Curare, Dodd, and keep handing it to me. We'll worry about everything else after Jenkins and I quiet them." This was obviously going to be a mass-production sort of business, not for efficiency, but through sheer necessity. And again, Jenkins with his queer taut steadiness was doing two for one that Doc could do, his face pale and his eyes almost glazed, but his hands moving endlessly and nervelessly on with his work.

Sometime during the night Jenkins looked up at Meyers, and motioned her back. "Go get some sleep, nurse; Miss Dodd can take care of both Dr. Ferrel and myself when we work close together. Your nerves are shot, and you need the rest. Dodd, you can call her back in two hours and rest yourself."

"What about you, doctor?"

"Me—" He grinned out of the corner of his mouth, crookedly. "I've got an imagination that won't sleep, and I'm needed here." The sentence ended on a rising inflection that was false to Ferrel's ear, and the older doctor looked at the boy thoughtfully.

Jenkins caught his look. "It's O. K., Doc; I'll let you know when I'm going to crack. It was O. K. to send Meyers back, wasn't it?"

"You were closer to her than I was, so you should know

better than I." Technically, the nurses were all directly under his control, but they'd dropped such technicalities long before. Ferrel rubbed the small of his back briefly, then picked up his scalpel again.

A faint gray light was showing in the east, and the wards had overflowed into the waiting room when the last case from the chambers was finished as best he could be. During the night, the converter had continued to spit occasionally, even through the tank armor twice, but now there was a temporary lull in the arrival of workers for treatment. Doc sent Jones after breakfast from the cafeteria, then headed into the office where Jenkins was already slumped down in the old leather chair.

The boy was exhausted almost to the limit from the combined strain of the work and his own suppressed jitters, but he looked up in mild surprise as he felt the prick of the needle. Ferrel finished it, and used it on himself before explaining. "Morphine, of course. What else can we do? Just enough to keep us going, but without it we'll both be useless out there in a few more hours. Anyhow, there isn't as much reason not to use it as there was when I was younger, before the counter-agent was discovered to kill most of its habit-forming tendency. Even five years ago, before they had that, there were times when morphine was useful, Lord knows, though anyone who used it except as a last resort deserved all the hell he got. A real substitute for sleep would be better, though; wish they'd finish up the work they're doing on that fatigue eliminator at Harvard. Here, eat that!"

Jenkins grimaced at the breakfast Jones laid out in front of him, but he knew as well as Doc that the food was necessary, and he pulled the plate back to him. "What I'd give an eye tooth for, Doc, wouldn't be a substitute—just half an hour of good old-fashioned sleep. Only, damn it, if I knew I had time, I couldn't do it—not with R out there bubbling away."

The telephone annunciator clipped in before Doc could answer. "Telephone for Dr. Ferrel; emergency! Dr. Brown calling Dr. Ferrel!"

"Ferrel answering!" The phone girl's face popped off the screen, and a tired-faced Sue Brown looked out at them. "What is it?"

"It's that little Japanese fellow—Hokusai—who's been running things out here, Dr. Ferrel. I'm bringing him in with an acute case of appendicitis. Prepare surgery!"

Jenkins gagged over the coffee he was trying to swallow,

and his choking voice was halfway between disgust and hysterical laughter. "Appendicitis, Doc! My God, what comes next?"

III

It might have been worse. Brown had coupled in the little freezing unit on the litter and lowered the temperature around the abdomen, both preparing Hokusai for surgery and slowing down the progress of the infection so that the appendix was still unbroken when he was wheeled into the surgery. His seamed Oriental face had a grayish cast under the olive, but he managed a faint grin.

"Verry ssorry, Dr. Ferrel, to bother you. Verry ssorry. No ether, please!"

Ferrel grunted. "No need of it, Hoke; we'll use hypothermy, since it's already begun. Over here, Jones. . . . And you might as well go back and sit down, Jenkins."

Brown was washing, and popped out again, ready to assist with the operation. "He had to be tied down, practically, Dr. Ferrel. Insisted that he only needed a little mineral oil and some peppermint for his stomach-ache! Why are intelligent people always the most stupid?"

It was a mystery to Ferrel, too, but seemingly the case. He tested the temperature quickly while the surgery hypothermy equipment began functioning, found it low enough, and began. Hoke flinched with his eyes as the scalpel touched him, then opened them in mild surprise at feeling no appreciable pain. The complete absence of nerve response with its accompanying freedom from post-operative shock was one of the great advantages of low-temperature work in surgery. Ferrel laid back the flesh, severed the appendix quickly, and removed it through the tiny incision. Then, with one of the numerous attachments, he made use of the ingenious mechanical stitcher and stepped back.

"All finished, Hoke, and you're lucky you didn't rupture—peritonitis isn't funny, even though we can cut down on it with the sulphonamides. The ward's full, so's the waiting room, so you'll have to stay on the table for a few hours until we can find a place for you; no pretty nurse, either—until the two other girls get here some time this morning. I dunno what we'll do about the patients."

"But, Dr. Ferrel, I am hear that now ssurgery—I sshould be up, already. There iss work I am do."

"You've been hearing that appendectomy patients aren't confined now, eh? Well, that's partly true. Johns Hopkins began it quite awhile ago. But for the next hour, while the temperature comes back to normal, you stay put. After that, if you want to move around a little, you can; but no going out to the converter. A little exercise probably helps more than it harms, but any strain wouldn't be good."

"But, the danger—"

"Be hanged, Hoke. You couldn't help now, long enough to do any good. Until the stuff in those stitches dissolves away completely in the body fluids, you're to take it easy—and that's two weeks, about."

The little man gave in, reluctantly. "Then I think I ssleep now. But besst you sshould call Mr. Palmer at once, please! He musst know I am not there!"

Palmer took the news the hard way, with an unfair but natural tendency to blame Hokusai and Ferrel. "Damn it, Doc, I was hoping he'd get things straightened out somehow—I practically promised the Governor that Hoke could take care of it; he's got one of the best brains in the business. Now this! Well, no help, I guess. He certainly can't do it unless he's in condition to get right into things. Maybe Jorgenson, though, knows enough about it to handle it from a wheel chair, or something. How's he coming along—in shape to be taken out where he can give directions to the foremen?"

"Wait a minute." Ferrel stopped him as quickly as he could. "Jorgenson isn't here. We've got thirty-one men lying around, and he isn't one of them; and if he'd been one of the seventeen dead, you'd know it. I didn't know Jorgenson was working, even."

"He had to be—it was his process! Look, Ferrel, I was distinctly told that he was taken to you—foreman dumped him on the litter himself and reported at once! Better check up, and quick—with Hoke only half able, I've got to have Jorgenson!"

"He isn't here—I know Jorgenson. The foreman must have mistaken the big fellow from the south safety for him, but that man had black hair inside his helmet. What about the three hundred-odd that were only unconscious, or the fifteen-sixteen hundred men outside the converter when it happened?"

Palmer wiggled his jaw muscles tensely. "Jorgenson would

have reported or been reported fifty times. Every man out there wants him around to boss things. He's gotta be in your ward."

"He isn't, I tell you! And how about moving some of the fellows here into the city hospitals?"

"Tried—hospitals must have been tipped off somehow about the radioactives in the flesh, and they refuse to let a man from here be brought in." Palmer was talking with only the surface of his mind, his cheek muscles bobbing as if he were chewing his thoughts and finding them tough. "Jorgenson—Hoke—and Kellar's been dead for years. Not another man in the whole country that understands this field enough to make a decent guess, even; I get lost on page six myself. Ferrel, could a man in a Tomlin five-shield armor suit make the safety in twenty seconds, do you think, from—say beside the converter?"

Ferrel considered it rapidly. A Tomlin weighed about four hundred pounds, and Jorgenson was an ox of a man, but only human. "Under the stress of an emergency, it's impossible to guess what a man can do, Palmer, but I don't see how he could work his way half that distance."

"Hm-m-m, I figured. Could he live, then, supposing he wasn't squashed? Those suits carry their own air for twenty-four hours, you know, to avoid any air cracks, pumping the carbon-dioxide back under pressure and condensing the moisture out—no openings of any kind. They've got the best insulation of all kinds we know, too."

"One chance in a billion, I'd guess; but again, it's darned hard to put any exact limit on what can be done—miracles keep happening, every day. Going to try it?"

"What else can I do? There's no alternative. I'll meet you outside No. 4 just as soon as you can make it, and bring everything you need to start working at once. Seconds may count!" Palmer's face slid sideways and up as he was reaching for the button, and Ferrel wasted no time in imitating the motion.

By all logic, there wasn't a chance, even in a Tomlin. But, until they knew, the effort would have to be made; chances couldn't be taken when a complicated process had gone out of control, with now almost certainty that Isotope R was the result—Palmer was concealing nothing, even though he had stated nothing specifically. And obviously, if Hoke couldn't handle it, none of the men at other branches of National

Atomic or at the smaller partially independent plants could make even a halfhearted stab at the job.

It all rested on Jorgenson, then. And Jorgenson must be somewhere under that semi-molten hell that could drive through the tank armor and send men back into the infirmary with bones broken from their own muscular anarchy!

Ferrel's face must have shown his thoughts, judging by Jenkins' startled expression. "Jorgenson's still in there somewhere," he said quickly.

"Jorgenson! But he's the man who— Good Lord!"

"Exactly. You'll stay here and take care of the jerk cases that may come in. Brown, I'll want you out there again. Bring everything portable we have, in case we can't move him in fast enough; get one of the trucks and fit it out; and be out with it about twice as fast as you can! I'm grabbing the litter now." He accepted the emergency kit Brown thrust into his hands, dumped a caffeine tablet into his mouth without bothering to wash it down, then was out toward the litter. "No. 4, and hurry!"

Palmer was just jumping off a scooter as they cut around No. 3 and in front of the rough fence of rope strung out quite a distance beyond 4. He glanced at Doc, nodded, and dived in through the men grouped around, yelling orders to right and left as she went, and was back at Ferrel's side by the time the litter had stopped.

O. K., Ferrel, go over there and get into armor as quickly as possible! We're going in there with the tanks, whether we can or not, and be damned to the quenching for the moment. Briggs, get those things out of there, clean out a roadway as best you can, throw in the big crane again, and we'll need all the men in armor we can get—give them steel rods and get them to probing in there for anything solid and big or small enough to be a man—five minutes at a stretch; they should be able to stand that. I'll be back pronto!"

Doc noted the confused mixture of tanks and machines of all descriptions clustered around the walls—or what was left of them—of the converter housing, and saw them yanking out everything along one side, leaving an opening where the main housing gate had stood, now ripped out to expose a crane boom rooting out the worst obstructions. Obviously they'd been busy at some kind of attempt at quenching the action, but his knowledge of atomics was too little even to guess at what it was. The equipment set up was being pushed aside by tanks without dismantling, and men were running up

into the roped-in section, some already armored, others dragging on part of their armor as they went. With the help of one of the atomjacks, he climbed into a suit himself, wondering what he could do in such a casing if anything needed doing.

Palmer had a suit on before him, though, and was waiting beside one of the tanks, squat and heavily armored, its front equipped with both a shovel and a grapple swinging from movable beams. "In here, Doc." Ferrel followed him into the housing of the machine and Palmer grabbed the controls as he pulled on a shortwave headset and began shouting orders through it toward the other tanks that were moving in on their heavy treads. The dull drone of the motor picked up, and the tank began lumbering forward under the manager's direction.

"Haven't run one of these since that show-off at a picnic seven years ago," he complained, as he kicked at the controls and straightened out a developing list to left. "Though I used to be pretty handy when I was plain engineer. Damned static around here almost chokes off the radio, but I guess enough gets through. By the best guess I can make, Jorgenson should have been near the main control panel when it started, and have headed for the south chamber. Half the distance, you figure?"

"Possibly, probably slightly less."

"Yeah! And then the stuff may have tossed him around. But we'll have to try to get there." He barked into the radio again. "Briggs, get those men in suits as close as you can and have them fish with their rods about thirty feet to the left of the pillar that's still up—can they get closer?"

The answer was blurred and pieces missing, but the general idea went across. Palmer frowned. "O. K., if they can't make it, they can't; draw them back out of the reach of the stuff and hold them ready to go in. . . . No, call for volunteers! I'm offering a thousand dollars a minute to every man that gets a stick in there, double to his family if the stuff gets him, and ten times that—fifty thousand—if he locates Jorgenson! . . . Look out, you blamed fool!" The last was to one of the men who'd started forward, toward the place, jumping from one piece of broken building to grab at a pillar and swing off in his suit toward something that looked like a standing position; it toppled, but he managed a leap that carried him to another lump, steadied himself, and began probing through the mess. "Oof! You with the crane—stick it in where you

can grab any of the men that pass out, if it'll reach—good! Doc, I know as well as you that the men have no business in there, even five minutes; but I'll send in a hundred more if it'll find Jorgenson!"

Doc said nothing—he knew there'd probably be a hundred or more fools willing to try, and he knew the need of them. The tanks couldn't work their way close enough for any careful investigation of the mixed mass of radioactives, machinery, building debris, and destruction, aside from which they were much too slow in such delicate probing; only men equipped with the long steel poles could do that. As he watched, some of the activity of the magma suddenly caused an eruption, and one of the men tossed up his pole and doubled back into a half circle before falling. The crane operator shoved the big boom over and made a grab, missed, brought it down again, and came out with the heaving body held by one arm, to run it back along its track and twist it outward beyond Doc's vision.

Even through the tank and the suit, heat was pouring in, and there was a faint itching in those parts where the armor was thinnest that indicated the start of a burn—though not as yet dangerous. He had no desire to think what was happening to the men who were trying to worm into the heart of it in nothing but armor; nor did he care to watch what was happening to them. Palmer was trying to inch the machine ahead, but the stuff underneath made any progress difficult. Twice something spat against the tank, but did not penetrate.

"Five minutes are up," he told Palmer. "They'd all better go directly to Dr. Brown, who should be out with the truck now for immediate treatment."

Palmer nodded and relayed the instructions. "Pick up all you can with the crane and carry them back! Send in a new bunch, Briggs, and credit them with their bonus in advance. Damn it, Doc, this can go on all day; it'll take an hour to pry around through this mess right here, and then he's probably somewhere else. The stuff seems to be getting worse in this neighborhood, too, from what accounts I've had before. Wonder if that steel plate could be pushed down?"

He threw in the clutch engaging the motor to the treads and managed to twist through toward it. There was a slight slipping of the lugs, then the tractors caught, and the nose of the tank thrust forward; almost without effort, the fragment of housing toppled from its leaning position and slid forward.

The tank growled, fumbled, and slowly climbed up onto it and ran forward another twenty feet to its end; the support settled slowly, but something underneath checked it, and they were still again. Palmer worked the grapple forward, nosing a big piece of masonry out of the way, and two men reached out with the ends of their poles to begin probing, futilely. Another change of men came out, then another.

Briggs' voice crackled erratically through the speaker again. "Palmer, I got a fool here who wants to go out on the end of your beam, if you can swing around so the crane can lift him out to it."

"Start him coming!" Again he began jerking the levers, and the tank buckled and heaved, backed and turned, ran forward and repeated it all, while the plate that was holding them flopped up and down on its precarious balance.

Doc held his breath and began praying to himself; his admiration for the men who'd go out in that stuff was increasing by leaps and bounds, along with his respect for Palmer's ability.

The crane boom bobbed toward them, and the scoop came running out, but wouldn't quite reach; their own tank was relatively light and mobile compared to the bigger machine, but Palmer already had that pushed out to the limit, and hanging over the edge of the plate. It still lacked three feet of reaching.

"Damn!" Palmer slapped open the door of the tank, jumped forward on the tread, and looked down briefly before coming back inside. "No chance to get closer! Wheeoo! Those men earn their money."

But the crane operator had his own tricks, and was bobbing the boom of his machine up and down slowly with a motion that set the scoop swinging like a huge pendulum, bringing it gradually closer to the grapple beam. The man had an arm out, and finally caught the beam, swinging out instantly from the scoop that drew backward behind him. He hung suspended for a second, pitching his body around to a better position, then somehow wiggled up onto the end and braced himself with his legs. Doc let his breath out and Palmer inched the tank around to a forward position again. Now the pole of the atomjack could cover the wide territory before them, and he began using it rapidly.

"Win or lose, that man gets a triple bonus," Palmer muttered. "Uh!"

The pole had located something, and was feeling around to determine size; the man glanced at them and pointed frantically. Doc jumped forward to the windows as Palmer ran down the grapple and began pushing it down into the semi-molten stuff under the pole; there was resistance there, but finally the prong of the grapple broke under and struck on something that refused to come up. The manager's hands moved the controls gently, making it tug from side to side; reluctantly, it gave and moved forward toward them, coming upward until they could make out the general shape. It was definitely no Tomlin suit!

"Lead hopper box! Damn—Wait, Jorgenson wasn't anybody's fool; when he saw he couldn't make the safety, he might . . . maybe—" Palmer slapped the grapple down again, against the closed lid of the chest, but the hook was too large. Then the man clinging there caught the idea and slid down to the hopper chest, his armored hands grabbing at the lid. He managed to lift a corner of it until the grapple could catch and lift it the rest of the way, and his hands started down to jerk upward again.

The manager watched his motions, then flipped the box over with the grapple, and pulled it closer to the tank body; magma was running out, but there was a gleam of something else inside.

"Start praying, Doc!" Palmer worked it to the side of the tank and was out through the door again, letting the merciless heat and radiation stream in.

But Ferrel wasn't bothering with that now; he followed, reaching down into the chest to help the other two lift out the body of a huge man in a five-shield Tomlin! Somehow, they wangled the six-hundred-odd pounds out and up on the treads, then into the housing, barely big enough for all of them. The atomjack pulled himself inside, shut the door and flopped forward on his face, out cold.

"Never mind him—check Jorgenson!" Palmer's voice was heavy with the reaction from the hunt, but he turned the tank and sent it outward at top speed, regardless of risk. Contrarily, it bucked through the mass more readily than it had crawled in through the cleared section.

Ferrel unscrewed the front plate of the armor on Jorgenson as rapidly as he could, though he knew already that the man was still miraculously alive—corpses don't jerk with force enough to move a four-hundred-pound suit appreciably. A side glance, as they drew beyond the wreck of the con-

verter housing, showed the men already beginning to set up equipment to quell the atomic reaction again, but the armor front plate came loose at last, and he dropped his eyes back without noticing details, to cut out a section of clothing and make the needed injections; curare first, then neo-heroin, and curare again, though he did not dare inject the quantity that seemed necessary. There was nothing more he could do until they could get the man out of his armor. He turned to the atomjack, who was already sitting up, propped against the driving seat's back.

"'Snothing much, Doc," the fellow managed. "No jerks, just burn and that damned heat! Jorgenson?"

"Alive at least," Palmer answered, with some relief. The tank stopped, and Ferrel could see Brown running forward from beside a truck. "Get that suit off you, get yourself treated for the burn, then go up to the office where the check will be ready for you!"

"Fifty-thousand check?" The doubt in the voice registered over the weakness.

"Fifty thousand plus triple your minute time, and cheap; maybe we'll toss in a medal or a bottle of Scotch, too. Here, you fellows give a hand."

Ferrel had the suit ripped off with Brown's assistance and paused only long enough for one grateful breath of clean, cool air before leading the way toward the truck. As he neared it, Jenkins popped out, directing a group of men to move two loaded stretchers onto the litter, and nodding jerkily at Ferrel. "With the truck all equipped, we decided to move out here and take care of the damage as it came up—Sue and I rushed them through enough to do until we can find more time, so we could give full attention to Jorgenson. He's still living!"

"By a miracle. Stay out here, Brown, until you've finished with the men from inside, then we'll try to find some rest for you."

The three huskies carrying Jorgenson placed the body on the table set up, and began ripping off the bulky armor as the truck got under way. Fresh gloves came out of a small sterilizer, and the two doctors fell to work at once, treating the badly burned flesh and trying to locate and remove the worst of the radioactive matter.

"No use." Doc stepped back and shook his head. "It's all over him, probably clear into his bones in places. We'd have to put him through a filter to get it all out!"

Palmer was looking down at the raw mass of flesh, with all the layman's sickness at such a sight. "Can you fix him up, Ferrel?"

"We can try, that's all. Only explanation I can give for his being alive at all is that the hopper box must have been pretty well above the stuff until a short time ago—very short—and this stuff didn't work in until it sank. He's practically dehydrated now, apparently, but he couldn't have perspired enough to keep from dying of heat if he'd been under all that for even an hour—insulation or no insulation." There was admiration in Doc's eyes as he looked down at the immense figure of the man. "And he's tough; if he weren't, he'd have killed himself by exhaustion, even confined inside that suit and box, after the jerks set in. He's close to having done so, anyway. Until we can find some way of getting that stuff out of him, we don't dare risk getting rid of the curare's effect—that's a time-consuming job, in itself. Better give him another water and sugar intravenous, Jenkins. Then, if we do fix him up, Palmer, I'd say it's a fifty-fifty chance that all this hasn't driven him stark crazy."

The truck had stopped, and the men lifted the stretcher off and carried it inside as Jenkins finished the injection. He went ahead of them, but Doc stopped outside to take Palmer's cigarette for a long drag, and let them go ahead.

"Cheerful!" The manager lighted another from the butt, his shoulders sagging. "I've been trying to think of one man who might possibly be of some help to us, Doc, and there isn't such a person—anywhere. I'm sure now, after being in there, that Hoke couldn't do it. Kellar, if he were still alive, could probably pull the answer out of a hat after three looks—he had an instinct and genius for it; the best man the business ever had, even if his tricks did threaten to steal our work out from under us and give him the lead. But—well, now there's Jorgenson—either he gets in shape, or else!"

Jenkins' frantic yell reached them suddenly. "Doc! Jorgenson's dead! He's stopped breathing entirely!"

Doc jerked forward into a full run, a white-faced Palmer at his heels.

IV

Dodd was working artificial respiration and Jenkins had the oxygen mask in his hands, adjusting it over Jorgenson's

face, before Ferrel reached the table. He made a grab for the pulse that had been fluttering weakly enough before, felt it flicker feebly once, pause for about three times normal period, lift feebly again, and then stop completely. "Adrenlin!"

"Already shot it into his heart, Doc! Cardiacine, too!" The boy's voice was bordering on hysteria, but Palmer was obviously closer to it than Jenkins.

"Doc, you gotta—"

"Get the hell out of here!" Ferrel's hands suddenly had a life of their own as he grabbed frantically for instruments, ripped bandages off the man's chest, and began working against time, when time had all the advantages. It wasn't surgery—hardly good butchery; the bones that he cut through so ruthlessly with savage strokes of an instrument could never heal smoothly after being so mangled. But he couldn't worry about minor details now.

He tossed back the flap of flesh and ribs that he'd hacked out. "Stop the bleeding, Jenkins!" Then his hands plunged into the chest cavity, somehow finding room around Dodd's and Jenkins', and were suddenly incredibly gentle as they located the heart itself and began working on it, the skilled, exact massage of a man who knew every function of the vital organ. Pressure here, there, relax, pressure again; take it easy, don't rush things! It would do no good to try to set it going as feverishly as his emotions demanded. Pure oxygen was feeding into the lungs, and the heart could safely do less work. Hold it steady, one beat a second, sixty a minute.

It had been perhaps half a minute from the time the heart stopped before his massage was circulating blood again; too little time to worry about damage to the brain, the first part to be permanently affected by stoppage of the circulation. Now, if the heart could start again by itself within any reasonable time, death would be cheated again. How long? He had no idea. They'd taught him ten minutes when he was studying medicine, then there'd been a case of twenty minutes once, and while he was interning it had been pushed up to a record of slightly over an hour, which still stood; but that was an exceptional case. Jorgenson, praise be, was a normally healthy and vigorous specimen, and his system had been in first-class condition, but with the torture of those long hours, the radioactive, narcotic and curare all fighting against him, still one more miracle was needed to keep his life going.

Press, massage, relax, don't hurry it too much. There! For

a second, his fingers felt a faint flutter, then again; but it stopped. Still, as long as the organ could show such signs, there was hope, unless his fingers grew too tired and he muffed the job before the moment when the heart could be safely trusted by itself.

"Jenkins!"

"Yes, sir!"

"Ever do any heart massage?"

"Practiced it in school, sir, on a model, but never actually. Oh, a dog in dissection class, for five minutes. I . . . I don't think you'd better trust me, Doc."

"I may have to. If you did it on a dog for five minutes, you can do it on a man, probably. You know what hangs on it—you saw the converter and know what's going on."

Jenkins nodded, the tense nod he'd used earlier. "I know—that's why you can't trust me. I told you I'd let you know when I was going to crack—well, it's damned near here!"

Could a man tell his weakness, if he were about finished? Doc didn't know; he suspected that the boy's own awareness of his nerves would speed up such a break, if anything, but Jenkins was a queer case, having taut nerves sticking out all over him, yet a steadiness under fire that few older men could have equaled. If he had to use him, he would; there was no other answer.

Doc's fingers were already feeling stiff—not yet tired, but showing signs of becoming so. Another few minutes, and he'd have to stop. There was the flutter again, one—two—three! Then it stopped. There had to be some other solution to this; it was impossible to keep it up for the length of time probably needed, even if he and Jenkins spelled each other. Only Michel at Mayo's could—Mayo's! If they could get it here in time, that wrinkle he'd seen demonstrated at their last medical convention was the answer.

"Jenkins, call Mayo's—you'll have to get Palmer's O. K., I guess—ask for Kubelik, and bring the extension where I can talk to him!"

He could hear Jenkins' voice, level enough at first, then with a depth of feeling he'd have thought impossible in the boy. Dodd looked at him quickly and managed a grim smile, even as she continued with the respiration; nothing could make her blush, though it should have done so.

The boy jumped back. "No soap, Doc! Palmer can't be lo-

cated—and that post-mortem misconception at the board won't listen."

Doc studied his hands in silence, wondering, then gave it up; there'd be no hope of his lasting while he sent out the boy. "O. K., Jenkins, you'll have to take over here, then. Steady does it, come on in slowly, get your fingers over mine. Now, catch the motion? Easy, don't rush things. You'll hold out—you'll have to! You've done better than I had any right to ask for so far, and you don't need to distrust yourself. There, got it?"

"Got it, Doc. I'll try, but for Pete's sake, whatever you're planning, get back here quick! I'm not lying about cracking! You'd better let Meyers replace Dodd and have Sue called back in here; she's the best nerve tonic I know."

"Call her in then, Dodd." Doc picked up a hypodermic syringe, filled it quickly with water to which a drop of another liquid added a brownish-yellow color, and forced his tired old legs into a reasonably rapid trot out of the side door and toward Communications. Maybe the switchboard operator was stubborn, but there were ways of handling people.

He hadn't counted on the guard outside the Communications Building, though. "Halt!"

"Life or death; I'm a physician."

"Not in here—I got orders." The bayonet's menace apparently wasn't enough; the rifle went up to the man's shoulder, and his chin jutted out with the stubbornness of petty authority and reliance on orders. "Nobody sick here. There's plenty of phones elsewhere. You get back—and fast!"

Doc started forward and there was a faint click from the rifle as the safety went off; the darned fool meant what he said. Shrugging, Ferrel stepped back—and brought the hypodermic needle up inconspicuously in line with the guard's face. "Ever see one of these things squirt curare? It can reach before your bullet hits!"

"Curare?" The guard's eyes flicked to the needle, and doubt came into them. The man frowned. "That's the stuff that kills people on arrows, ain't it?"

"It is—cobra venom, you know. One drop on the outside of your skin and you're dead in ten seconds." Both statements were out-and-out lies, but Doc was counting on the superstitious ignorance of the average man in connection with poisons. "This little needle can spray you with it very nicely, and

it may be a fast death, but not a pleasant one. Want to put down the rifle?"

A regular might have shot; but the militiaman was taking no chances. He lowered the rifle gingerly, his eyes on the needle, then kicked the weapon aside at Doc's motion. Ferrel approached, holding the needle out, and the man shrank backward and away, letting him pick up the rifle as he went past to avoid being shot in the back. Lost time! But he knew his way around this little building, at least, and went straight toward the girl at the board.

"Get up!" His voice came from behind her shoulder and she turned to see the rifle in one of his hands; the needle in the other, almost touching her throat. "This is loaded with curare, deadly poison, and too much hangs on getting a call through to bother with physician's oaths right now, young lady. Up! No plugs! That's right; now get over there, out of the cell—there, on your face, cross your hands behind your back, and grab your ankles—right! Now if you move, you won't move long!"

Those ganster pictures he'd seen were handy, at that. She was thoroughly frightened and docile. But, perhaps, not so much so she might not have bungled his call deliberately. He had to do that himself. Darn it, the red lights were trunk lines, but which plug—try the inside one, it looked more logical; he'd seen it done, but couldn't remember. Now, you flip back one of these switches—uh-uh, the other way. The tone came in assuring him he had it right, and he dialed operator rapidly, his eyes flickering toward the girl lying on the floor, his thoughts on Jenkins and the wasted time running on.

"Operator, this is an emergency. I'm Walnut, 7654; I want to put in a long-distance call to Dr. Kubelik, Mayo's Hospital, Rochester, Minnesota. If Kubelik isn't there, I'll take anyone else who answers from his department. Speed is urgent."

"Very good, sir." Long-distance operators, mercifully, were usually efficient. There were the repeated signals and clicks of relays as she put it through, the answer from the hospital board, more wasted time, and then a face appeared on the screen; but not that of Kubelik. It was a much younger man.

Ferrel wasted no time in introduction. "I've got an emergency case here where all Hades depends on saving a man, and it can't be done without that machine of Dr. Kubelik's; he knows me, if he's there—I'm Ferrel, met him at the convention, got him to show me how the thing worked."

"Kubelik hasn't come in yet, Dr. Ferrel; I'm his assistant.

But, if you mean the heart and lung exciter, it's already boxed and supposed to leave for Harvard this morning. They've got a rush case out there, and may need it—"

"Not as much as I do."

"I'll have to call—Wait a minute, Dr. Ferrel, seems I remember your name now. Aren't you the chap with National Atomic?"

Doc nodded. "The same. Now, about that machine, if you'll stop the formalities—"

The face on the screen nodded, instant determination showing, with an underlying expression of something else. "We'll ship it down to you instantly, Ferrel. Got a field for a plane?"

"Not within three miles, but I'll have a truck sent out for it. How long?"

"Take too long by truck if you need it down there, Ferrel; I'll arrange to transship in air from our special speedster to a helicopter, have it delivered wherever you want. About—um, loading plane, flying a couple hundred miles, transshipping—about half an hour's the best we can do."

"Make it the square of land south of the infirmary, which is crossed visibly from the air. Thanks!"

"Wait, Dr. Ferrel!" The younger man checked Doc's cut-off. "Can you use it when you get it? It's tricky work."

"Kubelik gave quite a demonstration and I'm used to tricky work. I'll chance it—have to. Too long to rouse Kubelik himself, isn't it?"

"Probably. O. K., I've got the telescript reply from the shipping office, it's starting for the plane. I wish you luck!"

Ferrel nodded his thanks, wondering. Service like that was welcome, but it wasn't the most comforting thing, mentally, to know that the mere mention of National Atomic would cause such an about-face. Rumors, it seemed, were spreading, and in a hurry, in spite of Palmer's best attempts. Good Lord, what was going on here? He'd been too busy for any serious worrying or to realize, but—well, it had gotten him the exciter, and for that he should be thankful.

The guard was starting uncertainly off for reinforcements when Doc came out, and he realized that the seemingly endless call must have been over in short order. He tossed the rifle well out of the man's reach and headed back toward the infirmary at a run, wondering how Jenkins had made out—it had to be all right!

Jenkins wasn't standing over the body of Jorgenson; Brown

was there instead, her eyes moist and her face pinched in and white around the nostrils that stood out at full width. She looked up, shook her head at him as he started forward, and went on working at Jorgenson's heart.

"Jenkins cracked?"

"Nonsense! This is woman's work, Dr. Ferrel, and I took over for him, that's all. You men try to use brute force all your life and then wonder why a woman can do twice as much delicate work where strong muscles are a nuisance. I chased him out and took over, that's all." But there was a catch in her voice as she said it, and Meyers was looking down entirely too intently at the work of artificial respiration.

"Hi, Doc!" It was Blake's voice that broke in. "Get away from there; when this Dr. Brown needs help, I'll be right in there. I've been sleeping like a darned fool all night, from four this morning on. Didn't hear the phone, or something, didn't know what was going on until I got to the gate out there. You go rest."

Ferrel grunted in relief; Blake might have been dead drunk when he finally reached home, which would explain his not hearing the phone, but his animal virility had soaked it out with no visible sign. The only change was the absence of the usual cocky grin on his face as he moved over beside Brown to test Jorgenson. "Thank the Lord you're here, Blake. How's Jorgenson doing?"

Brown's voice answered in a monotone, words coming in time to the motions of her fingers. "His heart shows signs of coming around once in a while, but it doesn't last. He isn't getting worse from what I can tell, though."

"Good. If we can keep him going half an hour more, we can turn all this over to a machine. Where's Jenkins?"

"A machine? Oh, the Kubelik exciter, of course. He was working on it when I was there. We'll keep Jorgenson alive until then, anyway, Dr. Ferrel."

"Where's Jenkins?" he repeated sharply, when she stopped with no intention of answering the former question.

Blake pointed toward Ferrel's office, the door of which was now closed. "In there. But lay off him, Doc. I saw the whole thing, and he feels like the deuce about it. He's a good kid, but only a kid, and this kind of hell could get any of us."

"I know all that." Doc headed toward the office, as much for a smoke as anything else. The sight of Blake's rested face was somehow an island of reassurance in this sea of fatigue and nerves. "Don't worry, Brown, I'm not planning on lacing

him down, so you needn't defend your man so carefully. It was my fault for not listening to him."

Brown's eyes were pathetically grateful in the brief flash she threw him, and he felt like a heel for the gruffness that had been his first reaction to Jenkins' absence. If this kept on much longer, though, they'd all be in worse shape than the boy, whose back was toward him as he opened the door. The still, huddled shape did not raise its head from its arms as Ferrel put his hand onto one shoulder, and the voice was muffled and distant.

"I cracked, Doc—high, wide and handsome, all over the place. I couldn't take it! Standing there, Jorgenson maybe dying because I couldn't control myself right, the whole plant blowing up, all my fault. I kept telling myself I was O. K., I'd go on, then I cracked. Screamed like a baby! Dr. Jenkins—*nerve specialist!*"

"Yeah. . . . Here, are you going to drink this, or do I have to hold your blasted nose and pour it down your throat?" It was crude psychology, but it worked, and Doc handed over the drink, waited for the other to down it, and passed a cigarette across before sinking into his own chair. "You warned me, Jenkins, and I risked it on my own responsibility, so nobody's kicking. But I'd like to ask a couple of questions."

"Go ahead—what's the difference?" Jenkins had recovered a little, obviously, from the note of defiance that managed to creep into his voice.

"Did you know Brown could handle that kind of work? And did you pull your hands out before she could get hers in to replace them?"

"She told me she could. I didn't know before. I dunno about the other; I think . . . yeah, Doc, she had her hands over mine. But—"

Ferrel nodded, satisfied with his own guess. "I thought so. You didn't crack, as you put it, until your mind knew it was safe to do so—and then you simply passed the work on. By that definition, I'm cracking, too. I'm sitting in here, smoking, talking to you, when out there a man needs attention. The fact that he's getting it from two others, one practically fresh, the other at a least a lot better off than we are, doesn't have a thing to do with it, does it?"

"But it wasn't that way, Doc. I'm not asking for grandstand stuff from anybody."

"Nobody's giving it to you, son. All right, you screamed—

why not? It didn't hurt anything. I growled at Brown when I came in for the same reason—exhausted, overstrained nerves. If I went out there and had to take over from them, I'd probably scream myself, or start biting my tongue—nerves have to have an outlet; physically, it does them no good, but there's a psychological need for it." The boy wasn't convinced, and Doc sat back in the chair, staring at him thoughtfully. "Ever wonder why I'm here?"

"No, sir."

"Well, you might. Twenty-seven years ago, when I was about your age, there wasn't a surgeon in this country—or the world, for that matter—who had the reputation I had; any kind of surgery, brain, what have you. They're still using some of my techniques . . . uh-hum, thought you'd remember when the association of names hit you. I had a different wife then, Jenkins, and there was a baby coming. Brain tumor—I had to do it, no one else could. I did it, somehow, but I went out of that operating room in a haze, and it was three days later when they'd tell me she'd died; not my fault—I know that now—but I couldn't realize it then.

"So, I tried setting up as a general practitioner. No more surgery for me! And because I was a fair diagnostician, which most surgeons aren't, I made a living, at least. Then, when this company was set up, I applied for the job, and got it; I still had a reputation of sorts. It was a new field, something requiring study and research, and damned near every ability of most specialists plus a general practitioner's, so it kept me busy enough to get over my phobia of surgery. Compared to me, you don't know what nerves or cracking means. That little scream was a minor incident."

Jenkins made no comment, but lighted the cigarette he'd been holding. Ferrel relaxed farther into the chair, knowing that he'd be called if there was any need for his work, and glad to get his mind at least partially off Jorgenson. "It's hard to find a man for this work, Jenkins. It takes too much ability at too many fields, even though it pays well enough. We went through plenty of applicants before we decided on you, and I'm not regretting our choice. As a matter of fact, you're better equipped for the job than Blake was—your record looked as if you'd deliberately tried for this kind of work."

"I did."

"Hm-m-m." That was the one answer Doc had least expected; so far as he knew, no one deliberately tried for a job

at Atomics—they usually wound up trying for it after comparing their receipts for a year or so with the salary paid by National. "Then you knew what was needed and picked it up in toto. Mind if I ask why?"

Jenkins shrugged. "Why not? Turnabout's fair play. It's kind of complicated, but the gist of it doesn't take much telling. Dad had an atomic plant of his own—and a darned good one, too, Doc, even if it wasn't as big as National. I was working in it when I was fifteen, and I went through two years of university work in atomics with the best intentions of carrying on the business. Sue—well, she was the neighbor girl I followed around, and we had money at the time; that wasn't why she married me, though. I never did figure that out—she'd had a hard enough life, but she was already holding down a job at Mayo's, and I was just a raw kid. Anyway—

"The day we came home from our honeymoon, dad got a big contract on a new process we'd worked out. It took some swinging, but he got the equipment and started it. . . . My guess is that one of the controls broke through faulty construction; the process was right! We'd been over it too often not to know what it would do. But, when the estate was cleared up, I had to give up the idea of a degree in atomics, and Sue was back working at the hospital. Atomic courses cost real money. Then one of Sue's medical acquaintances fixed it for me to get a scholarship in medicine that almost took care of it, so I chose the next best thing to what I wanted."

"National and one of the biggest competitors—if you can call it that—are permitted to give degrees in atomics," Doc reminded the boy. The field was still too new to be a standing university course, and there were no better teachers in the business than such men as Palmer, Hokusai and Jorgenson. "They pay a salary while you're learning, too."

"Hm-m-m. Takes ten years that way, and the salary's just enough for a single man. No, I'd married Sue with the intention she wouldn't have to work again; well, she did until I finished internship, but I knew if I got the job here I could support her. As an atomjack, working up to an engineer, the prospects weren't so good. We're saving a little money now, and someday maybe I'll get a crack at it yet. . . . Doc, what's this all about? You babying me out of my fit?"

Ferrel grinned at the boy. "Nothing else, son, though I was curious. And it worked. Feel all right now, don't you?"

"Mostly, except for what's going on out there—I got too much of a look at it from the truck. Oh, I could use some sleep, I guess, but I'm O. K. again."

"Good." Doc had profited almost as much as Jenkins from the rambling off-trail talk, and had managed more rest from it than from nursing his own thoughts. "Suppose we go out and see how they're making out with Jorgenson? Um, what happened to Hoke, come to think of it?"

"Hoke? Oh, he's in my office now, figuring out things with a pencil and paper since we wouldn't let him go back out there. I was wondering—"

"Atomics? . . . Then suppose you go in and talk to him; he's a good guy, and he won't give you the brush-off. Nobody else around here apparently suspected this Isotope R business, and you might offer a fresh lead for him. With Blake and the nurses here and the men out of the mess except for the tanks, there's not much you can do to help on my end."

Ferrel felt more at peace with the world than he had since the call from Palmer as he watched Jenkins head off across the surgery toward his office; and the glance that Brown threw, first toward the boy, then back at Doc, didn't make him feel worse. That girl could say more with her eyes than most women could with their mouths! He went over toward the operating table where Blake was now working the heart massage with one of the fresh nurses attending to respiration and casting longing glances toward the mechanical lung apparatus; it couldn't be used in this case, since Jorgenson's chest had to be free for heart attention.

Blake looked up, his expression worried. "This isn't so good, Doc. He's been sinking in the last few minutes. I was just going to call you. I—"

The last words were drowned out by the bull-throated drone that came dropping down from above them, a sound peculiarly characteristic of the heavy Sikorsky freighters with their modified blades to gain lift. Ferrel nodded at Brown's questioning glance, but he didn't choose to shout as his hands went over those of Blake and took over the delicate work of simulating the natural heart action. As Blake withdrew, the sound stopped, and Doc motioned him out with his head.

"You'd better go to them and oversee bringing in the apparatus—and grab up any of the men you see to act as porters—or send Jones for them. The machine is an experimental model, and pretty cumbersome; must weigh seven-eight hundred pounds."

"I'll get them myself—Jones is sleeping."

There was no flutter to Jorgenson's heart under Doc's deft manipulations, though he was exerting every bit of skill he possessed. "How long since there was a sign?"

"About four minutes, now. Doc, is there still a chance?"

"Hard to say. Get the machine, though, and we'll hope."

But still the heart refused to respond, though the pressure and manipulation kept the blood circulating and would at least prevent any starving or asphyxiation of the body cells. Carefully, delicately, he brought his mind into his fingers, trying to woo a faint quiver. Perhaps he did, once, but he couldn't be sure. It all depended on how quickly they could get the machine working now, and how long a man could live by manipulation alone. That point was still unsettled.

But there was no question about the fact that the spark of life burned faintly and steadily lower in Jorgenson, while outside the man-made hell went on ticking off the minutes that separated it from becoming Mahler's Isotope. Normally, Doc was an agnostic, but now, unconsciously, his mind slipped back into the simple faith of his childhood, and he heard Brown echoing the prayer that was on his lips. The second hand of the watch before him swung around and around and around again before he heard the sound of men's feet at the back entrance, and still there was no definite quiver from the heart under his fingers. How much time did he have left, if any, for the difficult and unfamiliar operation required?

His side glance showed the seemingly innumerable filaments of platinum that had to be connected into the nerves governing Jorgenson's heart and lungs, all carefully coded, yet almost terrifying in their complexity. If he made a mistake anywhere, it was at least certain there would be no time for a second trial; if his fingers shook or his tired eyes clouded at the wrong instant, there would be no help from Jorgenson. Jorgenson would be dead!

V

"Take over massage, Brown," he ordered. "And keep it up no matter what happens. Good. Dodd, assist me, and hang onto my signals. If it works, we can all rest afterward."

Ferrel wondered grimly with that part of his mind that was off by itself whether he could justify his boast to Jenkins of having been the world's greatest surgeon; it had been true

once, he knew with no need for false modesty, but that was long ago, and this was at best a devilish job. He'd hung on with a surge of the old fascination as Kubelik had performed it on a dog at the convention, and his memory for such details was still good, as were his hands. But something else goes into the making of a great surgeon, and he wondered if that were still with him.

Then, as his fingers made the microscopic little motions needed and Dodd became another pair of hands, he ceased wondering. Whatever it was, he could feel it surging through him, and there was a pure joy to it somewhere, over and above the urgency of the work. This was probably the last time he'd ever feel it, and if the operation succeeded, probably it was a thing he could put with the few mental treasures that were still left from his former success. The man on the table ceased to be Jorgenson, the excessively gadgety infirmarium became again the main operating theater of that same Mayo's which had produced Brown and this strange new machine, and his fingers were again those of the Great Ferrel, the miracle boy from Mayo's, who could do the impossible twice before breakfast without turning a hair.

Some of his feeling was devoted to the machine itself. Massive, ugly, with parts sticking out in haphazard order, it was more like something from an inquisition chamber than a scientist's achievement, but it worked—he'd seen it functioning. In that ugly mass of assorted pieces, little currents were generated and modulated to feed out to the heart and lungs and replace the orders given by a brain that no longer worked or could not get through, to coordinate breathing and beating according to the need. It was a product of the combined genius of surgery and electronics, but wonderful as the exciter was, it was distinctly secondary to the technique Kubelik had evolved for selecting and connecting only those nerves and nerve bundles necessary, and bringing the almost impossible into the limits of surgical possibility.

Brown interrupted, and that interruption in the midst of such an operation indicated clearly the strain she was under. "The heart fluttered a little then, Dr. Ferrel."

Ferrel nodded, untroubled by the interruption. Talk, which bothered most surgeons, was habitual in his own little staff, and he always managed to have one part of his mind reserved for that while the rest went on without noticing. "Good. That gives us at least double the leeway I expected."

His hands went on, first with the heart which was the more

pressing danger. Would the machine work, he wondered, in this case? Curare and radioactives, fighting each other, were an odd combination. Yet, the machine controlled the nerves close to the vital organ, pounding its message through into the muscles, where the curare had a complicated action that paralyzed the whole nerve, establishing a long block to the control impulses from the brain. Could the nerve impulses from the machine be forced through the short paralyzed passages? Probably—the strength of its signals was controllable. The only proof was in trying.

Brown drew back her hands and stared down uncomprehendingly. "It's beating, Dr. Ferrel! By itself . . . it's beating!"

He nodded again, though the mask concealed his smile. His technique was still not faulty, and he had performed the operation correctly after seeing it once on a dog! He was still the Great Ferrel! Then, the ego in him fell back to normal, though the lift remained, and his exultation centered around the more important problem of Jorgenson's living. And, later, when the lungs began moving of themselves as the nurse stopped working them, he had been expecting it. The detail work remaining was soon over, and he stepped back, dropping the mask from his face and pulling off his gloves.

"Congratulations, Dr. Ferrel!" The voice was guttural, strange. "A truly great operation—truly great. I almost stopped you, but now I am glad I did not; it was a pleasure to observe you, sir." Ferrel looked up in amazement at the bearded smiling face of Kubelik, and he found no words as he accepted the other's hand. But Kubelik apparently expected none.

"I, Kubelik, came, you see; I could not trust another with the machine, and fortunately I made the plane. Then you seemed so sure, so confident—so when you did not notice me, I remained in the background, cursing myself. Now, I shall return, since you have no need of me—the wiser for having watched you. . . . No, not a word; not a word from you, sir. Don't destroy your miracle with words. The 'copter awaits me, I go; but my admiration for you remains forever!"

Ferrel still stood looking down at his hand as the roar of the 'copter cut in, then at the breathing body with the artery on the neck now pulsing regularly. That was all that was needed; he had been admired by Kubelik, the man who thought all other surgeons were fools and nincompoops. For a second or so longer he treasured it, then shrugged it off.

"Now," he said to the others, as the troubles of the plant

fell back on his shoulders, "all we have to do is hope that Jorgenson's brain wasn't injured by the session out there, or by this continued artificially maintained life, and try to get him in condition so he can talk before it's too late. God grant us time! Blake, you know the detail work as well as I do, and we can't both work on it. You and the fresh nurses take over, doing the bare minimum needed for the patients scattered around the wards and waiting room. Any new ones?"

"None for some time; I think they've reached a stage where that's over with," Brown answered.

"I hope so. Then go round up Jenkins and lie down somewhere. That goes for you and Meyers, too, Dodd. Blake, give us three hours if you can, and get us up. There won't be any new developments before then, and we'll save time in the long run by resting. Jorgenson's to get first attention!"

The old leather chair made a fair sort of bed, and Ferrel was too exhausted physically and mentally to be choosy—too exhausted to benefit as much as he should from sleep of three hours' duration, for that matter, though it was almost imperative he try. Idly, he wondered what Palmer would think of all his safeguards had he known that Kubelik had come into the place so easily and out again. Not that it mattered; it was doubtful whether anyone else would want to come near, let alone inside the plant.

In that, apparently, he was wrong. It was considerably less than the three hours when he was awakened to hear the bull-roar of a helicopter outside. But sleep clouded his mind too much for curiosity and he started to drop back into his slumber. Then another sound cut in jerking him out of his drowsiness. It was the sharp sputter of a machine gun from the direction of the gate, a pause and another burst; an eddy of sleep-memory indicated that it had begun before the helicopter's arrival, so it could not be that they were gunning. More trouble, and while it was none of his business, he could not go back to sleep. He got up and went out into the surgery, just as a gnomish little man hopped out from the rear entrance.

The fellow scooted toward Ferrel after one birdlike glance at Blake, his words spilling out with a jerky self-importance that should have been funny, but missed it by a small margin; under the surface, sincerity still managed to show. "Dr. Ferrel? Uh, Dr. Kubelik—Mayo's, you know—he reported you were shorthanded; stacking patients in the other rooms. We

volunteered for duty—me, four other doctors, nine nurses. Probably should have checked with you, but couldn't get a phone through. Took the liberty of coming through directly, fast as we could push our 'copters."

Ferrel glanced through the back, and saw that there were three of the machines, instead of the one he'd thought, with men and equipment piling out of them. Mentally he kicked himself for not asking for help when he'd put through the call; but he'd been used to working with his own little staff for so long that the ready response of his profession to emergencies had been almost forgotten. "You know you're taking chances coming here, naturally? Then, in that case. I'm grateful to you and Kubelik. We've got about forty patients here, all of whom should have considerable attention, though I frankly doubt whether there's room for you to work."

The man hitched his thumb backward jerkily. "Don't worry about that. Kubelik goes the limit when he arranges things. Everything we need with us, practically all the hospital's atomic equipment; though maybe you'll have to piece us out there. Even a field hospital tent, portable wards for every patient you have. Want relief in here or would you rather have us simply move out the patients to the tent, leave this end to you? Oh, Kubelik sent his regards. Amazing of him!"

Kubelik, it seemed, had a tangible idea of regards, however dramatically he was inclined to express them; with him directing the volunteer force, the wonder was that the whole staff and equipment hadn't been moved down. "Better leave this end," Ferrel decided. "Those in the wards will probably be better off in your tent as well as the men now in the waiting room; we're equipped beautifully for all emergency work, but not used to keeping the patients here any length of time, so our accommodations that way are rough. Dr. Blake will show you around and help you get organized in the routine we use here. He'll get help for you in erecting the tent, too. By the way, did you hear the commotion by the entrance as you were landing?"

"We did, indeed. We saw it, too—bunch of men in some kind of uniform shooting a machine gun; hitting the ground, though. Bunch of other people running back away from it, shaking their fists, looked like. We were expecting a dose of the same, maybe; didn't notice us, though."

Blake snorted in half amusement. "You probably would have gotten it if our manager hadn't forgotten to give orders covering the air approach; they must figure that's an official

route. I saw a bunch from the city arguing about their relatives in here when I came in this morning, so it must have been that." He motioned the little doctor after him, then turned his neck back to address Brown. "Show him the results while I'm gone, honey."

Ferrel forgot his new recruits and swung back to the girl. "Bad?"

She made no comment, but picked up a lead shield and placed it over Jorgenson's chest so that it cut off all radiation from the lower part of his body, then placed the radiation indicator close to the man's throat. Doc looked once; no more was needed. It was obvious that Blake had already done his best to remove the radioactive from all parts of the body needed for speech, in the hope that they might strap down the others and block them off with local anesthetics; then the curare could have been counteracted long enough for such information as was needed. Equally obviously, he'd failed. There was no sense in going through the job of neutralizing the drug's block only to have him under the control of the radioactive still present. The stuff was too finely dispersed for surgical removal. Now what? He had no answer.

Jenkins' lean-sinewed hand took the indicator from him for inspection. The boy was already frowning as Doc looked up in faint surprise, and his face made no change. He nodded slowly. "Yeah. I figured as much. That was a beautiful piece of work you did, too. Too bad. I was watching from the door and you almost convinced me he'd be all right, the way you handled it. But—So we have to make out without him; and Hoke and Palmer haven't even cooked up a lead that's worth a good test. Want to come into my office, Doc? There's nothing we can do here."

Ferrel followed Jenkins into the little office off the now emptied waiting room; the men from the hospital had worked rapidly, it seemed. "So you haven't been sleeping, I take it? Where's Hokusai now?"

"Out there with Palmer; he promised to behave, if that'll comfort you. . . . Nice guy, Hoke; I'd forgotten what it felt like to talk to an atomic engineer without being laughed at. Palmer, too. I wish—" There was a brief lightening to the boy's face and the first glow of normal human pride Doc had seen in him. Then he shrugged, and it vanished back into his taut cheeks and reddened eyes. "We cooked up the wildest kind of a scheme, but it isn't so hot."

Hoke's voice came out of the doorway, as the little man came in and sat down carefully in one of the three chairs. "No, not sso hot! It iss fail, already. Jorgensson?"

"Out, no hope there! What happened?"

Hoke spread his arms, his eyes almost closing. "Nothing. We knew it could never work, not sso? Misster Palmer, he iss come ssoon here, then we make planss again, I am think now, besst we sshould move from here. Palmer, I—mosstly we are theoreticians; and, excusse, you alsso, doctor. Jorgensson wass the production man. No Jorgensson, no—ah—ssoap!"

Mentally, Ferrel agreed about the moving—and soon! But he could see Palmer's point of view; to give up the fight was against the grain, somehow. And besides, once the blowup happened, with the resultant damage to an unknown area, the pressure groups in Congress would be in, shouting for the final abolition of all atomic work; now they were reasonably quiet, only waiting an opportunity—or, more probably, at the moment were already seizing on the rumors spreading to turn this into their coup. If, by some streak of luck, Palmer could save the plant with no greater loss of life and property than already existed, their words would soon be forgotten, and the benefits from the products of National would again outweigh all risks.

"Just what will happen if it all goes off?" he asked.

Jenkins shrugged, biting at his inner lip as he went over a sheaf of papers on the desk, covered with the scrawling symbols of atomics. "Anybody's guess. Suppose three tons of the army's new explosives were to explode in a billionth—or at least, a millionth—of a second? Normally, you know, compared to atomics, that stuff burns like any fire, slowly and quietly, giving its gases plenty of time to get out of the way in an orderly fashion. Figure it one way, with this all going off together, and the stuff could drill a hole that'd split open the whole continent from Hudson Bay to the Gulf of Mexico, and leave a lovely sea where the Middle West is now. Figure it another, and it might only kill off everything within fifty miles of here. Somewhere in between is the chance we count on. This isn't U-235, you know."

Doc winced. He'd been picturing the plant going up in the air violently, with maybe a few buildings somewhere near it, but nothing like this. It had been purely a local affair to him, but this didn't sound like one. No wonder Jenkins was in that state of suppressed jitters; it wasn't too much imagination,

but too much cold, hard knowledge that was worrying him. Ferrel looked at their faces as they bent over the symbols once more, tracing out point by point their calculations in the hope of finding one overlooked loophole, then decided to leave them alone.

The whole problem was hopeless without Jorgenson, it seemed, and Jorgenson was his responsibility; if the plant went, it was squarely on the senior physician's shoulders. But there was no apparent solution. If it would help, he could cut it down to a direct path from brain to speaking organs, strap down the body and block off all nerves below the neck, using an artificial larynx instead of the normal breathing through vocal cords. But the indicator showed the futility of it; the orders could never get through from the brain with the amount of radioactive still present throwing them off track—even granting that the brain itself was not affected, which was doubtful.

Fortunately for Jorgenson, the stuff was all finely dispersed around the head, with no concentration at any one place that was unquestionably destructive to his mind; but the good fortune was also the trouble, since it could not be removed by any means known to medical practice. Even so simple a thing as letting the man read the questions and spell out the answers by winking an eyelid as they pointed to the alphabet was hopeless.

Nerves! Jorgenson had his blocked out, but Ferrel wondered if the rest of them weren't in as bad a state. Probably, somewhere well within their grasp, there was a solution that was being held back because the nerves of everyone in the plant were blocked by fear and pressure that defeated its own purpose. Jenkins, Palmer, Hokusai—under purely theoretical conditions, any one of them might spot the answer to the problem, but sheer necessity of finding it could be the thing that hid it. The same might be true with the problem of Jorgenson's treatment. Yet, though he tried to relax and let his mind stray idly around the loose ends and seemingly disconnected knowledge he had, it returned incessantly to the necessity of doing something, and doing it now!

Ferrel heard weary footsteps behind him and turned to see Palmer coming from the front entrance. The man had no business walking into the surgery, but such minor rules had gone by the board hours before.

"Jorgenson?" Palmer's conversation began with the same

old question in the usual tone, and he read the answer from Doc's face with a look that indicated it was no news. "Hoke and that Jenkins kid still in there?"

Doc nodded, and plodded behind him toward Jenkins' office; he was useless to them, but there was still the idea that in filling his mind with other things, some little factor he had overlooked might have a chance to come forth. Also, curiosity still worked on him, demanding to know what was happening. He flopped into the third chair, and Palmer squatted down on the edge of the table.

"Know a good spiritualist, Jenkins?" the manager asked. "Because if you do, I'm about ready to try calling back Kellar's ghost. The Steinmetz of atomics—so he had to die before this Isotope R came up, and leave us without even a good guess at how long we've got to crack the problem. Hey, what's the matter?"

Jenkins' face had tensed and his body straightened back tensely in the chair, but he shook his head, the corner of his mouth twitching wryly. "Nothing. Nerves, I guess. Hoke and I dug out some things that give an indication on how long this runs, though. We still don't know exactly, but from observations out there and the general theory before, it looks like something between six and thirty hours left; probably ten's closer to being correct!"

"Can't be much longer. It's driving the men back right now! Even the tanks can't get in where they can do the most good, and we're using the shielding around No. 3 as a headquarters for the men; in another half hour, maybe they won't be able to stay that near the thing. Radiation indicators won't register any more, and it's spitting all over the place, almost constantly. Heat's terrific; it's gone up to around three hundred centigrade and sticks right there now, but that's enough to warm up 3, even."

Doc looked up. "No. 3?"

"Yeah. Nothing happened to that batch—it ran through and came out I-713 right on schedule, hours ago." Palmer reached for a cigarette, realized he had one in his mouth, and slammed the package back on the table. "Significant data, Doc; if we get out of this, we'll figure out just what caused the change in No. 4—if we get out! Any chance of making those variable factors work, Hoke?"

Hoke shook his head, and again Jenkins answered from the notes. "Not a chance; sure, theoretically, at least, R should have a period varying between twelve and sixty hours before

turning into Mahler's Isotope, depending on what chains of reactions or subchains it goes through; they all look equally good, and probably are all going on in there now, depending on what's around to soak up neutrons or let them roam, the concentration and amount of R together, and even high or low temperatures that change their activity somewhat. It's one of the variables, no question about that."

"The sspitting iss prove that," Hoke supplemented.

"Sure. But there's too much of it together, and we can't break it down fine enough to reach any safety point where it won't toss energy around like rain. The minute one particle manages to make itself into Mahler's, it'll crash through with energy enough to blast the next over the hump and into the same thing instantly, and that passes it on to the next, at about light speed! If we *could* get it juggled around so some would go off first, other atoms a little later, and so on, fine—only we can't do it unless we can be sure of isolating every blob bigger than a tenth of a gram from every other one! And if we start breaking it down into reasonably small pieces, we're likely to have one decide on the short transformation subchain and go off at any time; pure chance gave us a concentration to begin with that eliminated the shorter chains, but we can't break it down into small lots and those into smaller lots, and so on. Too much risk!"

Ferrel had known vaguely that there were such things as variables, but the theory behind them was too new and too complex for him; he'd learned what little he knew when the simpler radioactives proceeded normally from radium to lead, as an example, with a definite, fixed half-life, instead of the super-heavy atoms they now used that could jump through several different paths, yet end up the same. It was over his head, and he started to get up and go back to Jorgenson.

Palmer's words stopped him. "I knew it, of course, but I hoped maybe I was wrong. Then—we evacuate! No use fooling ourselves any longer. I'll call the Governor and try to get him to clear the country around; Hoke, you can tell the men to get the hell out of here! All we ever had was the counteracting isotope to hope on, and no chance of getting enough of that. There was no sense in making I-231 in thousand-pound batches before. Well—"

He reached for the phone, but Ferrel cut in. "What about the men in the wards? They're loaded with the stuff, most of them with more than a gram apiece dispersed through them.

They're in the same class with the converter, maybe, but we can't just pull out and leave them!"

Silence hit them, to be broken by Jenkins' hushed whisper. "My God! What damned fools we are. I-231 under discussion for hours, and I never thought of it. Now you two throw the connection in my face, and I still almost miss it!"

"I-231? But there iss not enough. Maybe twenty-five pound, maybe less. Three and a half days to make more. The little we have would be no good, Dr. Jenkinss. We forget that already." Hoke struck a match to a piece of paper, shook one drop of ink onto it, and watched it continue burning for a second before putting it out. "Sso. A drop of water for sstop a foresst fire. No."

"Wrong, Hoke. A drop to short a switch that'll turn on the real stream—maybe. Look, Doc, I-231's an isotope that reacts atomically with R—we've checked on that already. It simply gets together with the stuff and the two break down into non-radioactive elements and a little heat, like a lot of other such atomic reactions; but it isn't the violent kind. They simply swap parts in a friendly way and open up to simpler atoms that are stable. We have a few pounds on hand, can't make enough in time to help with No. 4, but we do have enough to treat every man in the wards, *including Jorgenson!*"

"How much heat?" Doc snapped out of his lethargy into the detailed thought of a good physician. "In atomics you may call it a little; but would it be small enough in the human body?"

Hokusai and Palmer were practically riding the pencil as Jenkins figured. "Say five grams of the stuff in Jorgenson, to be on the safe side, less in the others. Time for reaction . . . hm-m. Here's the total heat produced and the time taken by the reaction, probably, in the body. The stuff's water-soluble in the chloride we have of it, so there's no trouble dispersing it. What do you make of it, Doc?"

"Fifteen to eighteen degrees temperature rise at a rough estimate. Uh!"

"Too much! Jorgenson couldn't stand ten degrees right now!" Jenkins frowned down at his figures, tapping nervously with his hand.

Doc shook his head. "Not too much! We can drop his whole body temperature first in the hypothermy bath down to eighty degrees, then let it rise to a hundred, if necessary, and still be safe. Thank the Lord, there's equipment enough. If

they'll rip out the refrigerating units in the cafeteria and improvise baths, the volunteers out in the tent can start on the other men while we handle Jorgenson. At least that way we can get the men all out, even if we don't save the plant."

Palmer stared at them in confusion before his face galvanized into resolution. "Refrigerating units—volunteers—tent? What—O. K., Doc, what do you want?" He reached for the telephone and began giving orders for the available I-231 to be sent to the surgery, for men to rip out the cafeteria cooling equipment, and for such other things as Doc requested. Jenkins had already gone to instruct the medical staff in the field tent without asking how they'd gotten there, but was back in the surgery before Doc reached it with Palmer and Hokusai at his heels.

"Blake's taking over out there," Jenkins announced. "Says if you want Dodd, Meyers, Jones or Sue, they're sleeping."

"No need. Get over there out of the way, if you must watch," Ferrel ordered the two engineers, as he and Jenkins began attaching the freezing units and bath to the sling on the exciter. "Prepare his blood for it, Jenkins; we'll force it down as low as we can to be on the safe side. And we'll have to keep tabs on the temperature fall and regulate his heart and breathing to what it would be normally in that condition; they're both out of his normal control, now."

"And pray," Jenkins added. He grabbed the small box out of the messenger's hand before the man was fully inside the door and began preparing a solution, weighing out the whitish powder and measuring water carefully, but with the speed that was automatic to him under tension. "Doc, if this doesn't work—if Jorgenson's crazy or something—you'll have another case of insanity on your hands. One more false hope would finish me."

"Not one more case; four! We're all in the same boat. Temperature's falling nicely—I'm rushing it a little, but it's safe enough. Down to ninety-six now." The thermometer under Jorgenson's tongue was one intended for hypothermy work, capable of rapid response, instead of the normal fever thermometer. Slowly, with agonizing reluctance, the little needle on the dial moved over, down to ninety, then on. Doc kept his eyes glued to it, slowing the pulse and breath to the proper speed. He lost track of the number of times he sent Palmer back out of the way, and finally gave up.

Waiting, he wondered how those outside in the field hospi-

tal were doing? Still, they had ample time to arrange their makeshift cooling apparatus and treat the men in groups—ten hours probably; and hypothermy was a standard thing, now. Jorgenson was the only real rush case. Almost imperceptibly to Doc, but speedily by normal standards, the temperature continued to fall. Finally it reached seventy-eight.

"Ready, Jenkins, make the injection. That enough?"

"No. I figure it's almost enough, but we'll have to go slow to balance out properly. Too much of this stuff would be almost as bad as the other. Gauge going up, Doc?"

It was, much more rapidly than Ferrel liked. As the injection coursed through the blood vessels and dispersed out to the fine deposits of radioactive, the needle began climbing past eighty, to ninety, and up. It stopped at ninety-four and slowly began falling as the cooling bath absorbed heat from the cells of the body. The radioactivity meter still registered the presence of Isotope R, though much more faintly.

The next shot was small, and a smaller one followed. "Almost," Ferrel commented. "Next one should about do the trick."

Using partial injections, there had been need for less drop in temperature than they had given Jorgenson, but there was small loss to that. Finally, when the last minute bit of the I-213 solution had entered the man's veins and done its work, Doc nodded. "No sign of activity left. He's up to ninety-five, now that I've cut off the refrigeration, and he'll pick up the little extra temperature in a hurry. By the time we can counteract the curare, he'll be ready. That'll take about fifteen minutes, Palmer."

The manager nodded, watching them dismantling the hypothermy equipment and going through the routine of canceling out the curare. It was always a slower job than treatment with the drug, but part of the work had been done already by the normal body processes, and the rest was a simple, standard procedure. Fortunately, the neo-heroin would be nearly worn off, or that would have been a longer and much harder problem to eliminate.

"Telephone for Mr. Palmer. Calling Mr. Palmer. Send Mr. Palmer to the telephone." The operator's words lacked the usual artificial exactness, and were only a nervous sing-song. It was getting her, and she wasn't bothered by excess imagination, normally. "Mr. Palmer is wanted on the telephone."

"Palmer." The manager picked up an instrument at hand, not equipped with vision, and there was no indication to the

caller. But Ferrel could see what little hope had appeared at the prospect of Jorgenson's revival disappearing. "Check! Move out of there, and prepare to evacuate, but keep quiet about that until you hear further orders! Tell the men Jorgenson's about out of it, so they won't lack for something to talk about."

He swung back to them. "No use, Doc, I'm afraid. We're already too late. The stuff's stepped it up again, and they're having to move out of No. 3 now. I'll wait on Jorgenson, but even if he's all right and knows the answer, we can't get in to use it!"

VI

"Healing's going to be a long, slow process, but they should at least grow back better than silver ribs; never take a pretty X-ray photo, though." Doc held the instrument in his hand, staring down at the flap opened in Jorgenson's chest, and his shoulders came up in a faint shrug. The little platinum filaments had been removed from around the nerves to heart and lungs, and the man's normal impulses were operating again, less steadily than under the exciter, but with no danger signals. "Well, it won't much matter if he's still sane."

Jenkins watched him begin stitching the flap back, his eyes centered over the table out toward the converter. "Doc, he's got to be sane! If Hoke and Palmer find it's what it sounds like out there, we'll have to count on Jorgenson. There's an answer somewhere, has to be! But we won't find it without him."

"Hm-m-m. Seems to me you've been having ideas yourself, son. You've been right so far, and if Jorgenson's out—" He shut off the stitcher, finished the dressings, and flopped down on a bench, knowing that all they could do was wait for the drugs to work on Jorgenson and bring him around. Now that he relaxed the control over himself, exhaustion hit down with full force; his fingers were uncertain as he pulled off the gloves. "Anyhow, we'll know in another five minutes or so."

"And heaven help us, Doc, if it's up to me. I've always had a flair for atomic theory; I grew up on it. But he's the production man who's been working at it week in and week out, and it's his process, to boot. . . . There they are now! All right for them to come back here?"

But Hokusai and Palmer were waiting for no permission.

At the moment, Jorgenson was the nerve center of the plant, drawing them back, and they stalked over to stare down at him, then sat where they could be sure of missing no sign of returning consciousness. Palmer picked up the conversation where he'd dropped it, addressing his remarks to both Hokusai and Jenkins.

"Damn that Link-Stevens postulate! Time after time it fails, until you figure there's nothing to it; then, this! It's black magic, not science, and if I get out, I'll find some fool with more courage than sense to discover why. Hoke, are you positive it's the *theta* chain? There isn't one chance in ten thousand of that happening, you know; it's unstable, hard to stop, tends to revert to the simpler ones at the first chance."

Hokusai spread his hands, lifted one heavy eyelid at Jenkins questioningly, then nodded. The boy's voice was dull, almost uninterested. "That's what I thought it had to be, Palmer. None of the others throws off that much energy at this stage, the way you described conditions out there. Probably the last thing we tried to quench set it up in that pattern, and it's in a concentration just right to keep it going. We figured ten hours was the best chance, so it had to pick the six-hour short chain."

"Yeah." Palmer was pacing up and down nervously again, his eyes swinging toward Jorgenson from whatever direction he moved. "And in six hours, maybe all the population around here can be evacuated, maybe not, but we'll have to try it. Doc, I can't even wait for Jorgenson now! I've got to get the Governor started at once!"

"They've been known to practice lynch law, even in recent years," Ferrel reminded him grimly. He'd seen the result of one such case of mob violence when he was practicing privately, and he knew that people remain pretty much the same year after year; they'd move, but first they'd demand a sacrifice. "Better get the men out of here first, Palmer, and my advice is to get yourself a good long distance off; I heard some of the trouble at the gate, and that won't be anything compared to what an evacuation order will do."

Palmer grunted. "Doc, you might not believe it, but I don't give a continental about what happens to me or the plant right now."

"Or the men? Put a mob in here, hunting your blood, and the men will be on your side, because they know it wasn't your fault, and they've seen you out there taking chances yourself. That mob won't be too choosy about its targets, ei-

ther, once it gets worked up, and you'll have a nice vicious brawl all over the place. Besides, Jorgenson's practically ready."

A few minutes would make no difference in the evacuation, and Doc had no desire to think of his partially crippled wife going through the hell evacuation would be; she'd probably refuse, until he returned. His eyes fell on the box Jenkins was playing with nervously, and he stalled for time. "I thought you said it was risky to break the stuff down into small particles, Jenkins. But that box contains the stuff in various sizes, including one big piece we scraped out, along with the contaminated instruments. Why hasn't it exploded?"

Jenkins' hand jerked up from it as if burned, and he backed away a step before checking himself. Then he was across the room toward the I-231 and back, pouring the white powder over everything in the box in a jerky frenzy. Hokusai's eyes had snapped fully open, and he was slopping water in to fill up the remaining space and keep the I-231 in contact with everything else. Almost at once, in spite of the low relative energy release, it sent up a white cloud of steam faster than the air conditioner could clear the room; but that soon faded down and disappeared.

Hokusai wiped his forehead slowly. "The ssuits—armor of the men?"

"Sent 'em back to the converter and had them dumped into the stuff to be safe long ago," Jenkins answered. "But I forgot that box, like a fool. Ugh! Either blind chance saved us or else the stuff spit out was all one kind, some reasonably long chain. I don't know nor care right—"

"S'ot! Nnnuh . . . Whmah nahh?"

"Jorgenson!" They swung from the end of the room like one man, but Jenkins was the first to reach the table. Jorgenson's eyes were open and rolling in a semiorderly manner, his hands moving sluggishly. The boy hovered over his face, his own practically glowing with the intensity behind it. "Jorgenson, can you understand what I'm saying?"

"Uh." The eyes ceased moving and centered on Jenkins. One hand came up to his throat, clutching at it, and he tried unsuccessfully to lift himself with the other, but the aftereffects of what he'd been through seemed to have left him in a state of partial paralysis.

Ferrel had hardly dared hope that the man could be rational, and his relief was tinged with doubt. He pushed Palmer back, and shook his head. "No, stay back. Let the boy

handle it; he knows enough not to shock the man now, and you don't. This can't be rushed too much."

"I—uh. . . . Young Jenkins? Whasha doin' here? Tell y'ur dad to ge' busy ou' there!" Somewhere in Jorgenson's huge frame, an untapped reserve of energy and will sprang up, and he forced himself into a sitting position, his eyes on Jenkins, his hand still catching at the reluctant throat that refused to cooperate. His words were blurry and uncertain, but sheer determination overcame the obstacles and made the words understandable.

"Dad's dead now, Jorgenson. Now—"

"'Sright. 'N' you're grown up—'bout twelve years old, y'were. . . . The plant!"

"Easy, Jorgenson." Jenkins' own voice managed to sound casual, though his hands under the table were white where they clenched together. "Listen, and don't try to say anything until I finish. The plant's still all right, but we've got to have your help. Here's what happened."

Ferrel could make little sense of the cryptic sentences that followed, though he gathered that they were some form of engineering shorthand; apparently, from Hokusai's approving nod, they summed up the situation briefly but fully, and Jorgenson sat rigidly still until it was finished, his eyes fastened on the boy.

"Hellova mess! Gotta think . . . yuh tried—" He made an attempt to lower himself back, and Jenkins assisted him, hanging on feverishly to each awkward, uncertain change of expression on the man's face. "Uh . . . da' sroat! Yuh . . . uh . . . urrgh!"

"Got it?"

"Uh!" The tone was affirmative, unquestionably, but the clutching hands around his neck told their own story. The temporary burst of energy he'd forced was exhausted, and he couldn't get through with it. He lay there, breathing heavily and struggling, then relaxed after a few more half-whispered words, none intelligently articulated.

Palmer clutched at Ferrel's sleeve. "Doc, isn't there anything you can do?"

"Try." He metered out a minute quantity of drug doubtfully, felt Jorgenson's pulse, and decided on half that amount. "Not much hope, though; that man's been through hell, and it wasn't good for him to be forced around in the first place. Carry it too far, and he'll be delirious if he does talk. Any-

way, I suspect it's partly his speech centers as well as the throat."

But Jorgenson began a slight rally almost instantly, trying again, then apparently drawing himself together for a final attempt. When they came, the words spilled out harshly in forced clearness, but without inflection.

"First . . . variable . . . at . . . twelve . . . water . . . stop." His eyes, centered on Jenkins, closed, and he relaxed again, this time no longer fighting off the inevitable unconsciousness.

Hokusai, Palmer and Jenkins were staring back and forth at one another questioningly. The little Japanese shook his head negatively at first, frowned, and repeated it, to be imitated almost exactly by the manager. "Delirious ravings!"

"The great white hope Jorgenson!" Jenkins' shoulders dropped and the blood drained from his face, leaving it ghastly with fatigue and despair. "Oh, damn it, Doc, stop staring at me! I can't pull a miracle out of a hat!"

Doc hadn't realized that he was staring, but he made no effort to change it. "Maybe not, but you happen to have the most active imagination here, when you stop abusing it to scare yourself. Well, you're on the spot now, and I'm still giving odds on you. Want to bet, Hoke?"

It was an utterly stupid thing, and Doc knew it; but somewhere during the long hours together, he'd picked up a queer respect for the boy and a dependence on the nervousness that wasn't fear but closer akin to the reaction of a rear-running thoroughbred on the home stretch. Hoke was too slow and methodical, and Palmer had been too concerned with outside worries to give anywhere nearly full attention to the single most urgent phase of the problem; that left only Jenkins, hampered by his lack of self-confidence.

Hoke gave no sign that he caught the meaning of Doc's heavy wink, but he lifted his eyebrows faintly. "No, I think I am not bet. Dr. Jenkins, I am to be command!"

Palmer looked briefly at the boy, whose face mirrored incredulous confusion, but he had neither Ferrel's ignorance of atomic technique nor Hokusai's fatalism. With a final glance at the unconscious Jorgenson, he started across the room toward the phone. "You men play, if you like. I'm starting evacuation immediately!"

"Wait!" Jenkins was shaking himself, physically as well as mentally. "Hold it, Palmer! Thanks, Doc. You knocked me out of the rut, and bounced my memory back to something I

picked up somewhere; I think it's the answer! It has to work—nothing else can at this stage of the game!"

"Give me the Governor, operator." Palmer had heard, but he went on with the phone call. "This is no time to play crazy hunches until after we get the people out, kid. I'll admit you're a darned clever amateur, but you're no atomicist!"

"And if we get the men out, it's too late—there'll be no one left in here to do the work!" Jenkins' hand snapped out and jerked the receiver of the plug-in telephone from Palmer's hand. "Cancel the call, operator; it won't be necessary. Palmer, you've got to listen to me; you can't clear the whole middle of the continent, and you can't depend on the explosion to limit itself to less ground. It's a gamble, but you're risking fifty million people against a mere hundred thousand. Give me a chance!"

"I'll give you exactly one minute to convince me, Jenkins, and it had better be good! Maybe the blowup won't hit beyond the fifty-mile limit!"

"Maybe. And I can't explain in a minute." The boy scowled tensely. "O. K., you've been bellyaching about a man named Kellar being dead. If he were here, would you take a chance on him? Or on a man who'd worked under him on everything he tried?"

"Absolutely, but you're not Kellar. And I happen to know he was a lone wolf; didn't hire outside engineers after Jorgenson had a squabble with him and came here." Palmer reached for the phone. "It won't wash, Jenkins."

Jenkins' hand clamped down on the instrument, jerking it out of reach. "I wasn't *outside* help, Palmer. When Jorgenson was afraid to run one of the things off and quit, I was twelve; three years later, things got too tight for him to handle alone, but he decided he might as well keep it in the family, so he started me in. I'm Kellar's stepson!"

Pieces clicked together in Doc's head then, and he kicked himself mentally for not having seen the obvious before. "That why Jorgenson knew you, then? I thought that was funny. It checks, Palmer."

For a split second, the manager hesitated uncertainly. Then he shrugged and gave in. "O. K., I'm a fool to trust you, Jenkins, but it's too late for anything else, I guess. I never forgot that I was gambling the locality against half the continent. What do you want?"

"Men—construction men, mostly, and a few volunteers for dirty work. I want all the blowers, exhaust equipment, tubing,

booster blowers and everything ripped from the other three converters and connected as close to No. 4 as you can get. Put them up some way so they can be shoved in over the stuff by crane—I don't care how; the shop men will know better than I do. You've got sort of a river running off behind the plant; get everyone within a few miles of it out of there, and connect the blower outlets down to it. Where does it end, anyway—some kind of a swamp, or morass?"

"About ten miles farther down, yes; we didn't bother keeping the drainage system going, since the land meant nothing to us, and the swamps made as good a dumping ground as anything else." When the plant had first used the little river as an outlet for their waste products, there'd been so much trouble that National had been forced to take over all adjacent land and quiet the owners' fears of the atomic activity in cold cash. Since then, it had gone to weeds and rabbits, mostly. "Everyone within a few miles is out, anyway, except a few fishers or tramps that don't know we use it. I'll have militia sent in to scare them out."

"Good. Ideal, in fact, since the swamps will hold stuff longer in there where the current's slow. Now, what about that superthermite stuff you were producing last year. Any around?"

"Not in the plant. But we've got tons of it at the warehouse, still waiting for the army's requisition. That's pretty hot stuff to handle, though. Know much about it?"

"Enough to know it's what I want." Jenkins indicated the copy of the *Weekly Ray* still lying where he'd dropped it, and Doc remembered skimming through the nontechnical part of the description. It was made up of two superheavy atoms, kept separate. By itself, neither was particularly important or active, but together they reacted with each other atomically to release a tremendous amount of raw heat and comparatively little unwanted radiation. "Goes up around twenty thousand centigrade, doesn't it? How's it stored?"

"In ten-pound bombs that have a fragile partition; it breaks with shock, starting the action. Hoke can explain it—it's his baby." Palmer reached for the phone. "Anything else? Then, get out and get busy! The men will be ready for you when you get there! I'll be out myself as soon as I can put through your orders."

Doc watched them go out, to be followed in short order by the manager, and was alone in the infirmary with Jorgenson

and his thoughts. They weren't pleasant; he was both too far outside the inner circle to know what was going on and too much mixed up in it not to know the dangers. Now he could have used some work of any nature to take his mind off useless speculations, but aside from a needless check of the foreman's condition, there was nothing for him to do.

He wriggled down in the leather chair, making the mistake of trying to force sleep, while his mind chased out after the sounds that came in from outside. There were the drones of crane and tank motors coming to life, the shouts of hurried orders, and above all, the jarring rhythm of pneumatic hammers on metal, each sound suggesting some possibility to him without adding to his knowledge. The "Decameron" was boring, the whiskey tasted raw and rancid, and solitaire wasn't worth the trouble of cheating.

Finally, he gave up and turned out to the field hospital tent. Jorgenson would be better off out there, under the care of the staff from Mayo's, and perhaps he could make himself useful. As he passed through the rear entrance, he heard the sound of a number of helicopters coming over with heavy loads, and looked up as they began settling over the edge of the buildings. From somewhere, a group of men came running forward, and disappeared in the direction of the freighters. He wondered whether any of those men would be forced back into the stuff out there to return filled with radioactive; though it didn't matter so much, now that the isotope could be eliminated without surgery.

Blake met him at the entrance of the field tent, obviously well satisfied with his duty of bossing and instructing the others. "Scram, Doc. You aren't necessary here, and you need some rest. Don't want you added to the casualties. What's the latest dope from the pow-wow front?"

"Jorgenson didn't come through, but the kid had an idea, and they're out there working on it." Doc tried to sound more hopeful than he felt. "I was thinking you might as well bring Jorgenson in here; he's still unconscious, but there doesn't seem to be anything to worry about. Where's Brown? She'll probably want to know what's up, if she isn't asleep."

"Asleep when the kid isn't? Uh-huh. Mother complex, has to worry about him." Blake grinned. "She got a look at him running out with Hoke tagging at his heels, and hiked out after him, so she probably knows everything now. Wish Anne'd chase me that way, just once— Jenkins, the wonder boy! Well, it's out of my line; I don't intend to start worrying until

they pass out the order. O. K., Doc, I'll have Jorgenson out here in a couple of minutes, so you grab yourself a cot and get some shut-eye."

Doc grunted, looking curiously at the refinements and well-equipped interior of the field tent. "I've already prescribed that, Blake, but the patient can't seem to take it. I think I'll hunt up Brown, so give me a call over the public speaker if anything turns up."

He headed toward the center of action, knowing that he'd been wanting to do it all along, but hadn't been sure of not being a nuisance. Well, if Brown could look on, there was no reason why he couldn't. He passed the machine shop, noting the excited flurry of activity going on, and went past No. 2, where other men were busily ripping out long sections of big piping and various other devices. There was a rope fence barring his way, well beyond No. 3, and he followed along the edge, looking for Palmer or Brown.

She saw him first. "Hi, Dr. Ferrel, over here in the truck. I thought you'd be coming soon. From up here we can get a look over the heads of all these other people, and we won't be tramped on." She stuck down a hand to help him up, smiled faintly as he disregarded it and mounted more briskly than his muscles wanted to. He wasn't so old that a girl had to help him yet.

"Know what's going on?" he asked, sinking down onto the plank across the truck body, facing out across the men below toward the converter. There seemed to be a dozen different centers of activity, all crossing each other in complete confusion, and the general pattern was meaningless.

"No more than you do. I haven't seen my husband, though Mr. Palmer took time enough to chase me here out of the way."

Doc centered his attention on the 'copters, unloading, rising, and coming in with more loads, and he guessed that those boxes must contain the little thermodyne bombs. It was the one thing he could understand, and consequently the least interesting. Other men were assembling the big sections of piping he'd seen before, connecting them up in almost endless order, while some of the tanks hooked on and snaked them off in the direction of the small river that ran off beyond the plant.

"Those must be the exhaust blowers, I guess," he told Brown, pointing them out. "Though I don't know what any of the rest of the stuff hooked on is."

"I know—I've been inside the plant Bob's father had." She lifted an inquiring eyebrow at him, went on as he nodded. "The pipes are for exhaust gases, all right, and those big square things are the motors and fans—they put in one at each five hundred feet or less of piping. The things they're wrapping around the pipe must be the heaters to keep the gases hot. Are they going to try to suck all that out?"

Doc didn't know, though it was the only thing he could see. But he wondered how they'd get around the problem of moving in close enough to do any good. "I heard your husband order some thermodyne bombs, so they'll probably try to gasify the magma; then they're pumping it down the river."

As he spoke, there was a flurry of motion at one side, and his eyes swung over instantly, to see one of the cranes laboring with a long framework stuck from its front, holding up a section of pipe with a nozzle on the end. It tilted precariously, even though heavy bags were piled everywhere to add weight, but an inch at a time it lifted its load, and began forcing its way forward, carrying the nozzle out in front and rather high.

Below the main exhaust pipe was another smaller one. As it drew near the outskirts of the danger zone, a small object ejaculated from the little pipe, hit the ground, and was a sudden blazing inferno of glaring blue-white light, far brighter than it seemed, judging by the effect on the eyes. Doc shielded his, just as someone below put something into his hands.

"Put 'em on. Palmer says the light's actinic."

He heard Brown fussing beside him, then his vision cleared, and he looked back through the goggles again to see a glowing cloud spring up from the magma, spread out near the ground, narrowing down higher up, until it sucked into the nozzle above, and disappeared. Another bomb slid from the tube, and erupted with blazing heat. A sideways glance showed another crane being fitted, and a group of men near it wrapping what might have been oiled rags around the small bombs; probably no tubing fitted them exactly, and they were padding them so pressure could blow them forward and out. Three more dropped from the tube, one at a time, and the fans roared and groaned, pulling the cloud that rose into the pipe and feeding it down toward the river.

Then the crane inched back out carefully as men uncoupled its piping from the main line, and a second went in to replace it. The heat generated must be too great for the machine to stand steadily without the pipe fusing, Doc de-

cided; though they couldn't have kept a man inside the heavily armored cab for any length of time, if the metal had been impervious. Now another crane was ready, and went in from another place; it settled down to a routine of ingoing and outcoming cranes, and men feeding materials in, coupling and uncoupling the pipes and replacing the others who came from the cabs. Doc began to feel like a man at a tennis match, watching the ball without knowing the rules.

Brown must have had the same idea, for she caught Ferrel's arm and indicated a little leather case that came from her handbag. "Doc, do you play chess? We might as well fill our time with that as sitting here on edge, just watching. It's supposed to be good for nerves."

He seized on it gratefully, without explaining that he'd been city champion three years running; he'd take it easy, watch her game, handicap himself just enough to make it interesting by the deliberate loss of a rook, bishop or knight, as was needed to even the odds— Suppose they got all the magma out and into the river; how did that solve the problem? It removed it from the plant, but far less than the fifty-mile minimum danger limit.

"Check," Brown announced. He castled, and looked up at the half-dozen cranes that were now operating. "Check! Checkmate!"

He looked back again hastily, then, to see her queen guarding all possible moves, a bishop checking him. Then his eye followed down toward her end. "Umm. Did you know you've been in check for the last half-dozen moves? Because I didn't."

She frowned, shook her head, and began setting the men up again. Doc moved out the queen's pawn, looked out at the workers, and then brought out the king's bishop, to see her take it with her king's pawn. He hadn't watched her move it out, and had counted on her queen's to block his. Things would require more careful watching on this little portable set. The men were moving steadily and there was a growing clear space, but as they went forward, the violent action of the thermodyne had pitted the ground, carefully as it had been used, and going became more uncertain. Time was slipping by rapidly now.

"Checkmate!" He found himself in a hole, started to nod; but she caught herself this time. "Sorry, I've been playing my

king for a queen. Doctor, let's see if we can play at least one game right."

Before it was half finished, it became obvious that they couldn't. Neither had chess very much on the mind, and the pawns and men did fearful and wonderful things, while the knights were as likely to jump six squares as their normal L. They gave it up, just as one of the cranes lost its precarious balance and toppled forward, dropping the long extended pipe into the bubbling mass below. Tanks were in instantly, hitching on and tugging backward until it came down with a thump as the pipe fused, releasing the extreme forward load. It backed out on its own power, while another went in. The driver, by sheer good luck, hobbled from the cab, waving an armored hand to indicate he was all right. Things settled back to an excited routine again that seemed to go on endlessly, though seconds were dropping off too rapidly, turning into minutes that threatened to be hours far too soon.

"Uh!" Brown had been staring for some time, but her little feet suddenly came down with a bang and she straightened up, her hand to her mouth. "Doctor, I just thought; it won't do any good—all this!"

"Why?" She couldn't know anything, but he felt the faint hopes he had go downward sharply. His nerves were dulled, but still ready to jump at the slightest warning.

"The stuff they were making was a superheavy—it'll sink as soon as it hits the water, and all pile up right there! It won't float down river!"

Obvious, Ferrel thought; too obvious. Maybe that was why the engineers hadn't thought of it. He started from the plank, just as Palmer stepped up, but the manager's hand on his shoulder forced him back.

"Easy, Doc, it's O. K. Umm, so they teach women *some* science nowadays, eh, Mrs. Jenkins . . . Sue . . . Dr. Brown, whatever your name is? Don't worry about it, though—the old principle of Brownian movement will keep any colloid suspended, if it's fine enough to be a real colloid. We're sucking it out and keeping it pretty hot until it reaches the water—then it cools off so fast it hasn't time to collect in particles big enough to sink. Some of the dust that floats around in the air is heavier than water, too. I'm joining the bystanders, if you don't mind; the men have everything under control, and I can see better here than I could down there, if anything does come up."

Doc's momentary despair reacted to leave him feeling

more sure of things than was justified. He pushed over on the plank, making room for Palmer to drop down beside him. "What's to keep it from blowing up anyway, Palmer?"

"Nothing! Got a match?" He sucked in on the cigarette heavily, relaxing as much as he could. "No use trying to fool you, Doc, at this stage of the game. We're gambling, and I'd say the odds are even; Jenkins thinks they're ninety to ten in his favor, but he has to think so. What we're hoping is that by lifting it out in a gas, thus breaking it down at once from full concentration to the finest possible form, and letting it settle in the water in colloidal particles, there won't be a concentration at any one place sufficient to set it all off at once. The big problem is making sure we get every bit of it cleaned out here, or there may be enough left to take care of us and the nearby city! At least, since the last change, it's stopped spitting, so all the man have to worry about is burn!"

"How much damage, even if it doesn't go off all at once?"

"Possibly none. If you can keep it burning slowly, a million tons of dynamite wouldn't be any worse than the same amount of wood, but a stick going off at once will kill you. Why the dickens didn't Jenkins tell me he wanted to go into atomics? We could have fixed all that—it's hard enough to get good men as it is!"

Brown perked up, forgetting the whole trouble beyond them, and went into the story with enthusiasm, while Ferrel only partly listened. He could see the spot of magma growing steadily smaller, but the watch on his wrist went on ticking off minutes remorselessly, and the time was growing limited. He hadn't realized before how long he'd been sitting there. Now three of the crane nozzles were almost touching, and around them stretched the burned-out ground, with no sign of converter, masonry, or anything else; the heat from the thermodyne had gassified everything, indiscriminately.

"Palmer!" The portable ultrawave set around the manager's neck came to life suddenly. "Hey, Palmer, these blowers are about shot; the pipe's pitting already. We've been doing everything we can to replace them, but that stuff eats faster than we can fix. Can't hold up more'n fifteen minutes more."

"Check, Briggs. Keep 'em going the best you can." Palmer flipped a switch and looked out toward the tank standing by behind the cranes. "Jenkins, you get that?"

"Yeah. Surprised they held out this long. How much time

till deadline?" The boy's voice was completely toneless, neither hope nor nerves showing up, only the complete weariness of a man almost at his limit.

Palmer looked and whistled. "Twelve minutes, according to the minimum estimate Hoke made! How much left?"

"We're just burning around now, trying to make sure there's no pocket left; I hope we've got the whole works, but I'm not promising. Might as well send out all the I-231 you have and we'll boil it down the pipes to clear out any deposits on them. All the old treads and parts that contacted the R gone into the pile?"

"You melted the last, and your cranes haven't touched the stuff directly. Nice pile of money's gone down that pipe—converter, machinery, everything!"

Jenkins made a sound that was expressive of his worry about that. "I'm coming in now and starting the clearing of the pipe. What've you been paying insurance for?"

"At a lovely rate, too! O. K., come on in, kid; and if you're interested, you can start sticking A. E. after the M. D., anytime you want. Your wife's been giving me your qualifications, and I think you've passed the final test, so you're now an atomic engineer, duly graduated from National!"

Brown's breath caught, and her eyes seemed to glow, even through the goggles, but Jenkins' voice was flat. "O. K., I expected you to give me one if we don't blow up. But you'll have to see Dr. Ferrel about it; he's got a contract with me for medical practice. Be there shortly."

Nine of the estimated twelve minutes had ticked by when he climbed up beside them, mopping off some of the sweat that covered him, and Palmer was hugging the watch. More minutes ticked off slowly, while the last sound faded out in the plant, and the men stood around, staring down toward the river or at the hole that had been No. 4. Silence. Jenkins stirred, and grunted.

"Palmer, I know where I got the idea, now. Jorgenson was trying to remind me of it, instead of raving, only I didn't get it, at least consciously. It was one of Dad's, the one he told Jorgenson was a last resort, in case the thing they broke up about went haywire. It was the first variable Dad tried. I was twelve, and he insisted water would break it up into all its chains and kill the danger. Only Dad didn't really expect it to work!"

Palmer didn't look up from the watch, but he caught his breath and swore. "Fine time to tell me that!"

"He didn't have your isotopes to heat it up with, either," Jenkins answered mildly. "Suppose you look up from that watch of yours for a minute, down the river."

As Doc raised his eyes, he was aware suddenly of a roar from the men. Over to the south, stretching out in a huge mass, was a cloud of steam that spread upward and out as he watched, and the beginnings of a mighty hissing sound came in. Then Palmer was hugging Jenkins and yelling until Brown could pry him away and replace him.

"Ten miles or more of river, plus the swamps, Doc!" Palmer was shouting in Ferrel's ear. "All that dispersion, while it cooks slowly from now until the last chain is finished, atom by atom! The *theta* chain broke, unstable and now there's everything there, too scattered to set itself off! It'll cook the river bed up and dry it, but that's all!"

Doc was still dazed, unsure of how to take the relief. He wanted to lie down and cry or to stand up with the men and shout his head off. Instead, he sat loosely, gazing at the cloud. "So I lose the best assistant I ever had! Jenkins, I won't hold you; you're free for whatever Palmer wants."

"Hoke wants him to work on R—he's got the stuff for his bomb now!" Palmer was clapping his hands together slowly, like an excited child watching a steam shovel. "Heck, Doc, pick out anyone you want until your own boy gets out next year. You wanted a chance to work him in here, now you've got it. Right now I'll give you anything you want."

"You might see what you can do about hospitalizing the injured and fixing things up with the men in the tent behind the infirmary. And I think I'll take Brown in Jenkins' place, with the right to grab him in an emergency, until that year's up."

"Done." Palmer slapped the boy's back, stopping the protest, while Brown winked at him. "Your wife likes working, kid; she told me that herself. Besides, a lot of the women work here where they can keep an eye on their men; my own wife does, usually. Doc, take these two kids and head for home, where I'm going myself. Don't come back until you get good and ready, and don't let them start fighting about it!"

Doc pulled himself from the truck and started off with Brown and Jenkins following, through the yelling, relief-crazed men. The three were too thoroughly worn out for any exhibition themselves, but they could feel it. Happy ending! Jenkins and Brown where they wanted to be, Hoke with his

bomb, Palmer with proof that atomic plants were safe where they were, and he—well, his boy would start out right, with himself and the widely differing but competent Blake and Jenkins to guide him. It wasn't a bad life, after all.

Then he stopped and chuckled. "You two wait for me, will you? If I leave here without making out that order of extra disinfection at the showers, Blake'll swear I'm growing old and feeble-minded. I can't have that."

Old? Maybe a little tired, but he'd been that before, and with luck would be again. He wasn't worried. His nerves were good for twenty years and fifty accidents more, and by that time Blake would be due for a little ribbing himself.

BARRIER

Astounding SF,

September

by Anthony Boucher (William Anthony
Parker White, (1911-1968))

One of the premier Renaissance men in the science fiction world, Anthony Boucher was a man of wide interests and many talents. An influential and excellent book reviewer in both the mystery (as "H.H. Holmes") and sf fields (as Boucher and "Holmes"), his non-sf mystery Rocket to the Morgue (1429) contained several thinly veiled and humorous references to the world of science fiction and sf fandom. As a writer within the genre he seemed more at home with fantasy, although he produced a number of excellent science fiction stories, including "The Quest for Saint Aquin" (1951), and "Q.U.R." (1943). However, it was as an editor that Boucher made his greatest contribution, for, along with J. Francis McComas, he was founding co-editor of The Magazine of Fantasy and Science Fiction, one of the "Big Three" of the post-World War II era. "Barrier" illustrates his wide-ranging interests in its excellent combination of the theme of time travel and the science of linguistics.

("Rocket to the Morgue", as Marty points out, was a *roman à clef* in which the chief fun was picking out who the various fictional characters represented in real life. None represented me—one mark against Tony. However, I was mentioned when Tony said that various characters sat about discussing various sf topics, including "Asimov's positronic robots" and *misspelled my name*. It wasn't till over a decade later that I actually met Tony but I had long since forgiven him, for I had submitted a number of stories to him and his rejec-

tions—when he rejected—were so kind that it would have taken a heart of stone to bear resentment.—I.A.)

The first difficulty was with language.

That is only to be expected when you jump five hundred years, but it is nonetheless perplexing to have your first casual query of: "What city is this?" answered by the sentence: "Stappers will get you. Or be you Slanduch?"

It was significant that the first word John Brent heard in the State was "Stappers." But Brent could not know that then. It was only some hours later and fifty years earlier that he was to learn the details of the Stapper system. At the moment all that concerned him was food and plausibility.

His appearance was plausible enough. Following Deringer's advice he had traveled naked—"the one costume common to all ages," the scientist had boomed; "Which would astonish you more, lad; a naked man, or an Elizabethan courtier in full apparel?"—and commenced his life in the twenty-fifth century by burglary and the theft of a complete outfit of clothing. The iridescent woven plastics tailored in a half-clinging, half-flowing style looked precious to Brent, but seemed both comfortable and functional.

No man alive in 2473 would have bestowed a second glance on the feloniously clad Brent, but in his speech, he realized at once, lay danger. He pondered the alternatives presented by the stranger. Stappers would get him unless he was Slanduch. Whatever Stappers were, things that "get you" sounded menacing. "Slanduch," he replied.

The stranger nodded. "That bees O.K.," he said, and Brent wondered what he had committed himself to. "So what city is this?" he repeated.

"Bees," the stranger chided. "Stappers be more severe now since Edict of 2470. Before they doed pardon some irregularities, but now none even from Slanduch."

"I be sorry," said Brent humbly, making a mental note that irregular verbs were for some reason perilous. "But for the third time—"

He had thought the wall beside them was solid. He realized now that part of it, at least, was only a deceptive glass-like curtain that parted to let forth a tall and vigorous man, followed by two shorter aides. All three of these wore robes

similar to the iridescent garments of Brent and his companion, but of pure white.

The leader halted and barked out, "George Starvel?"

Brent saw a quiet sort of terror begin to grow on his companion's face. He nodded and held out his wrist.

The man in white glanced at what Brent decided must be an identification plaque. "Starvel," he announced, "you spoke against Barrier."

Starvel trembled. "Cosmos knows I do not."

"Five men know that you do."

"Never. I only said—"

"You only! Enough!"

The rod appeared in the man's hand only for an instant. Brent saw no flame or discharge; but Starvel was stretched out on the ground and the two aides were picking him up as callously as though he were a log.

The man turned toward Brent, who was taking no chances. He flexed his legs and sprang into the air. His fingertips grasped the rim of the balcony above them, and his feet shot out into the white-robed man's face. His arm and shoulder muscles tensed to their utmost. The smooth plastic surface was hell to keep a grip on. Beneath, he could see his adversary struggling blindly to his feet and groping for the rod. At last, desperately, Brent swung himself up and over the edge.

There was no time to contemplate the beauties of the orderly terrace garden. There was only time to note that there was but one door, and to make for it. It was open and led to a long corridor. Brent turned to the nearest of the many identical doors. Apartments? So—he was taking a chance; whatever was behind that door, the odds were better than with an armed policeman you'd just kicked in the face. Brent had always favored the devil you don't know—or he'd never have found himself in this strange world. He walked toward the door, and it opened.

He hurried into an empty room, glancing back to see the door shut by itself. The room had two other doors. Each of them opened equally obligingly. Bathroom and bedroom. No kitchen. (His stomach growled a comment.) No people. And no exit from the apartment but the door he had come through.

He forced himself to sit down and think. Anything might happen before the Stapper caught up with him, for he had no doubt that was what the white-robed man must be.

What had he learned about the twenty-fifth century in this brief encounter?

You must wear an identification plaque. (Memo: How to get one?) You must not use irregular verbs (or nouns; the Stapper had said "mans"). You must not speak against Barrier, whoever or whatever that meant. You must beware white-robed men who lurk behind false walls. You must watch out for rods that kill (query: or merely stun?). Doors open by selenium cells (query: how do they lock?). You must—

The door opened. It was not the Stapper who stood there, but a tall and majestic woman of, at a guess, sixty. A noble figure—"Roman matron" were the words that flashed into Brent's mind.

The presence of a total stranger in her apartment seemed nowise disconcerting. She opened her arms in a broad gesture of welcome. "John Brent!" she exclaimed in delighted recognition. "It beed so long!"

"I don't want a brilliant young scientific genius!" Derringer had roared when Brent answered his cryptically worded ad. "I've got 'em here in the laboratory. They've done grand work on the time machine. I couldn't live without 'em, and there's not a one of 'em I'd trust out of this century. Not out of this decade. What I want is four things: A knowledge of history, for a background of analogy to understand what's been going on; linguistic ability, to adjust yourself as rapidly as possible to the changes in language; physical strength and dexterity, to get yourself out of the scrapes that are bound to come up; and social adaptability. A chimpanzee of reasonably subhuman intelligence could operate the machine. What counts is what you'll be able to do after you get there."

The knowledge of history and the physical qualities had been easy to demonstrate. The linguistic ability was a bit more complex; Derringer had contrived an intricate series of tests involving adjustment to phonetic changes and the capacity to assimilate the principles of a totally fictitious language invented for the occasion. The social adaptability was measured partly by an aptitude test, but largely Brent guessed, by Derringer's own observation during the weeks of preparation after his probationary hiring.

He had passed all four requirements with flying colors. At least Derringer had grinned at him through the black beard and grunted the reluctant "Good man!" that was his equiva-

lent of rhapsodic praise. His physical agility had already stood him in good stead, and his linguistic mind was rapidly assimilating the new aspects of the language (there were phonetic alterations as well as the changes in vocabulary and inflection—he was particularly struck by the fact that the vowels *a* and *o* no longer possessed the diphthongal off-glide so characteristic of English, but were pure vowels like the Italian *e* and *o*), but his social adaptability was just now hitting a terrific snag.

What the hell do you do when a Roman matron whom you have never seen, born five hundred years after you, welcomes you by name and exclaims that it haves beed a long time? (This regular past participle of *be*, Brent reflected, gives the speaker something of the quality of a Bostonian with a cold in the nose.)

For a moment he toyed with the rash notion that she might likewise be a time traveler, someone whom he had known in 1942. Derringer had been positive that this was the first such trip ever attempted; but someone leaving the twentieth century later might still be an earlier arrival in the twenty-fifth. He experimented with the idea.

"I suppose," Brent ventured, "you could call five hundred years a long time, in its relative way."

The Roman matron frowned. "Do not jest, John. Fifty years be not five hundred. I will confess that first five years seemed at times like five centuries, but after fifty—one does not feel so sharply."

Does was of course pronounced *dooze*. All *r*'s, even terminal, were lightly trilled. These facts Brent noted in the back of his mind, but the fore part was concerned with the immediate situation. If this woman chose to accept him as an acquaintance—it was nowise unlikely that his double should be wandering about in this century—it meant probably protection from the Stapper. His logical mind protested, "Could this double have your name?" but he shushed it.

"Did you," he began, and caught himself. "Doed you see anyone in the hall—a man in white?"

The Roman matron moaned. "Oh, John! Do Stappers seek you again? But of course. If you have comed to destroy Barrier, they must destroy you."

"Whoa there!" Brent had seen what happened to one person who had merely "speaked against Barrier." "I didn't . . . doesn't . . . say anything against Barrier."

The friendliness began to die from her clear blue eyes.

"And I believed you," she said sorrowfully. "You telled us of this second Barrier and swore to destroy it. We thinkd you beed one of us. And now—"

No amount of social adaptability can resist a sympathetic and dignified woman on the verge of tears. Besides, this apartment was for the moment a valuable haven, and if she thought he was a traitor of some sort—

"Look," said Brent. "You see, I am—there isn't any use at this moment trying to be regular—I am not whoever you think I am. I never saw you before. I couldn't have. This is the first instant I've ever been in your time."

"If you wish to lie to me, John—"

"I'm not lying. And I'm not John—at least not the one you're thinking of. I'm John Brent, I'm twenty-eight years old, and I was born in 1914—a good five and a half centuries ago."

According to all the time travel fiction Brent had ever read, that kind of statement ranks as a real stunner. There is a deathly hush and a wild surmise and the author stresses the curtain-line effect by inserting a line space.

But the Roman matron was unmoved. The hush and the surmise were Brent's an instant later when she said with anguished patience, "I know, John, I know."

"Derringer left this one out of the rule book," Brent grunted. "Madam, you have, as they say, the better of me. What does A do now?"

"You *do* be same John!" she smiled. "I never beed able to understand you."

"We have much in common," Brent observed.

"And because I can't understand you, I know you be you." She was still smiling. It was an odd smile; Brent couldn't place its precise meaning. Not until she leaned toward him and for one instant gently touched his arm.

He needed friends. Whatever her wild delusions, she seemed willing to help him. But he still could not quite keep from drawing back as he recognized the tender smile of love on this dignified ancient face.

She seemed to sense his withdrawal. For a moment he feared a gathering anger. Then she relaxed, and with another smile, a puzzled but resigned smile, said, "This be part of not understanding you, I guess. Cosmos knows but you be so young, John, still so *young* . . ."

She must, Brent thought with sudden surprise, have been a very pretty girl.

The door opened. The man who entered was as tall as the Stapper, but wore the civilian's iridescent robes. His long beard seemed to have caught a little of their rainbow influence; it was predominantly red, but brown and black and white glinted in it. The hair on his head was graying. He might have been anywhere from forty-five to a vigorous and well-preserved seventy.

"We have a guest, sister?" he asked politely.

The Roman matron made a despairing gesture. "You don't recognize him? And John—you don't know Stephen?"

Stephen slapped his thigh and barked—a sound that seemed to represent a laugh of pleasure. "Cosmos!" he cried. "John Brent! I told you, Martha. I knew he wouldn't fail us."

"Stephen!" she exclaimed in shocked tones.

"Hang the irregularities! Can't I greet John with the old words that comed—no, by Cosmos—*came* from the same past he came from? See, John—don't I talk the old language well? I even use article—pardon me, *the* article."

Brent's automatic mental notebook recorded the fact, which he had already suspected, that an article was as taboo as an irregular verb. But around this self-governing notation system swirled utter confusion. It might possibly have been just his luck to run into a madwoman. But two mad brains in succession with identical delusions were too much. And Stephen had known he was from the past.

"I'm afraid," he said simply, "this is too much for me. Suppose we all sit down and have a drink of something and talk this over."

Stephen smiled. "You remember our bond, eh? And not many places in State you'll find it. Even fewer than before." He crossed to a cabinet and returned with three glasses of colorless liquid.

Brent seized his eagerly and downed it. A drink might help the swirling. It might—

The drink had gone down smoothly and tastelessly. Now, however, some imp began dissecting atoms in his stomach and shooting off a bombardment stream of particles that zoomed up through his throat into his brain, where they set off a charge of explosive of hitherto unknown power. Brent let out a strangled yelp.

Stephen barked again. "Good bond, eh, John?"

Brent managed to focus his host through the blurring lens of his tears. "Sure," he nodded feebly. "Swell. And now let me try to explain—"

The woman looked sadly at her brother. "He denies us, Stephen. He says that he has never seed me before. He forgets all that he ever swore about Barrier."

A curious look of speculation came into Stephen's brown eyes. "Bees this true, John? You have never seed us before in your life?"

"But, Stephen, you know—"

"Hush, Martha. I sayed in *his* life. Bees it true, John?"

"It bees. God knows it bees. I have never seen . . . seed either of you in my life."

"But Stephen—"

"I understand now, Martha. Remember when he telled us of Barrier and his resolve?"

"Can I forget?"

"How did he know of Barrier? Tell me that."

"I don't know," Martha confessed. "I have wondered—"

"He knowed of Barrier then because he bees here now. He telled me then just what we must now tell him."

"Then for heaven's sake," Brent groaned, "tell me."

"Your pardon, John. My sister bees not so quick to grasp source of these temporal confusions. More bond?" He had the bottle in his hand when he suddenly stopped, thrust it back in the cabinet, and murmured, "Go into bedroom."

Brent obeyed. This was no time for displaying initiative. And no sooner had the bedroom door closed behind him than he heard the voice of the Stapper. (The mental notebook recorded that apartment buildings must be large, if it had taken this long for the search to reach here.)

"No," Stephen was saying. "My sister and I have beed here for past half-hour. We seed no one."

"State thanks you," the Stapper muttered, so casually that the phrase must have been an official formula. His steps sounded receding. Then they stopped, and there was the noise of loud sniffs.

"Dear God," thought Brent, "have they crossed the bulls with bloodhounds?"

"Bond," the Stapper announced.

"Dear me," came Martha's voice. "Who haves beed in here today, Stephen?"

"I'm homeopath," said the Stapper. "Like cures like. A little bond might make me forget I smelled it."

There was a bark from Stephen and a clink of glasses. No noise from either of them as they downed the liquor. Those,

sir, were men. (Memo: Find out why such unbelievable rot-gut is called *Bond*, of all things.)

"State thanks you," said the Stapper, and laughed. "You know George Starvel, don't you?"

A slightly hesitant "Yes" from Stephen.

"When you see him again, I think you'll find he haves changed his mind. About many things."

There was silence. Then Stephen opened the bedroom door and beckoned Brent back into the living room. He handed him a glass of bond and said, "I will be brief."

Brent, now forewarned, sipped at the liquor and found it cheerfully warming as he assimilated the new facts.

In the middle of the twenty-fourth century, he learned, civilization had reached a high point of comfort, satisfaction, achievement—and stagnation. The combination of atomic power and De Bainville's revolutionary formulation of the principles of labor and finance had seemed to solve all economic problems. The astounding development of synthetics had destroyed the urgent need for raw materials and colonies and abolished the distinction between haves and have-nots among nations. Schwarzwalders *Compendium* had achieved the dream of the early Encyclopedists—the complete systematization of human knowledge. Farthing had regularized the English language, an achievement paralleled by the work of Zinsmeister, Timofeov, and Tamayo y Sárate in their respective tongues. (These four languages now dominated the earth. French and Italian had become corrupt dialects of German, and the Oriental languages occupied in their own countries something the position of Greek and Latin in nineteenth-century Europe, doomed soon to the complete oblivion which swallowed up those classic tongues in the twenty-first.)

There was nothing more to be achieved. All was known, all was accomplished. Nakamura's Law of Spatial Acceleration had proved interplanetary travel to be impossible for all time. Charnwood's Law of Temporal Metabolism had done the same for time travel. And the Schwarzwalders *Compendium*, which everyone admired and no one had read, established such a satisfactory and flawless picture of knowledge that it was obviously impossible that anything remained to be discovered.

It was then that Dyce-Farnsworth proclaimed the Stasis of Cosmos. A member of the Anglo-Physical Church, product of

the long contemplation by English physicists of the metaphysical aspects of science, he came as the prophet needed to pander to the self-satisfaction of the age.

He was curiously aided by Farthing's laws of regularity. The article, direct or indirect, Farthing had proved to be completely unnecessary—had not languages as world-dominant as Latin in the first centuries and Russian in the twenty-first found no need for it?—and semantically misleading. "Article," he had said in his final and comprehensive study *This Bees Speech*, "bees prime corruptor of human thinking."

And thus the statement so beloved in the twentieth century by metaphysical-minded scientists and physical-minded divines, "God is the cosmos," became with Dyce-Farnsworth, "God bees cosmos," and hence, easily and inevitably, "God bees Cosmos," so that the utter scientific impersonality became a personification of Science. Cosmos replaced Jehovah, Baal and Odin.

The love of Cosmos was not man nor his works, but Stasis. Man was tolerated by Cosmos that he might achieve Stasis. All the millennia of human struggle had been aimed at this supreme moment when all was achieved, all was known, and all was perfect. Therefore this supernal Stasis must at all costs be maintained. Since Now was perfect, any alteration must be imperfect and taboo.

From this theory logically evolved the State, whose duty was to maintain the perfect Stasis of Cosmos. No totalitarian government had ever striven so strongly to iron out all doubt and dissension. No religious bigotry had ever found heresy so damnable and worthy of destruction. The Stasis must be maintained.

It was, ironically, the aged Dyce-Farnsworth himself who, in a moment of quasi-mystical intuition, discovered the flaw in Charnwood's Law of Temporal Metabolism. And it was clear to him what must be done.

Since the Stasis of Cosmos did not practice time travel, any earlier or later civilization that did so must be imperfect. Its emissaries would sow imperfection. There must be a Barrier.

The mystic went no further than that dictum, but the scientists of the State put his demand into practical terms. "Do not ask how at this moment," Stephen added. "I be not man to explain that. But you will learn." The first Barrier was a failure. It destroyed itself and to no apparent result. But now, fifty years later, the fears of time travel had grown.

The original idea of the imperfection of emissaries had been lost. Now time travel was in itself imperfect and evil. Any action taken against it would be praise to Cosmos. And the new Barrier was being erected.

"But John knows all this," Martha protested from time to time, and Stephen would shake his head sadly and smile sympathetically at Brent.

"I don't believe a word of it," Brent said at last. "Oh, the historical outline's all right. I trust you on that. And it works out sweetly by analogy. Take the religious fanaticism of the sixteenth century, the smug scientific self-satisfaction of the nineteenth, the power domination of the twentieth—fuse them and you've got your State. But the Barrier's impossible. It can't work."

"Charnwood claimed there beed no principle on which time travel can work. And here you be."

"That's different," said Brent vaguely. "But this talk of destroying the Barrier is nonsense. There's no need to."

"Indeed there bees need, John. For two reasons: one, that we may benefit by wisdom of travelers from other ages; and two, that positive act of destroying this Barrier, worshiped now with something like fetishism, bees strongest weapon with which we can strike against State. For there be these few of us who hope to save mankind from this fanatical complacency that race hayes falled into. George Starvel beed one," Stephen added sadly.

"I saw Starvel—But that isn't what I mean. There's no need because the Barrier won't work."

"But you telled us that it haved to be destroyed," Martha protested. "That it doed work, and that we—"

"Hush," said Stephen gently. "John, will you trust us far enough to show us your machine? I think I can make matters clearer to Martha then."

"If you'll keep me out of the way of Stappers."

"That we can never guarantee—yet. But day will come when mankind cans forget Stappers and State, that I swear." There was stern and noble courage in Stephen's face and bearing as he drained his glass to that pledge.

"I had a break when I landed here," John Brent explained on the way. "Derringer equipped the machine only for temporal motion. He explained that it meant running a risk; I might find that the coastline had sunk and I'd arrive under water, or God knows what. But he hadn't worked out the

synchronized adjustments for tempo-spatial motion yet, and he wanted to get started. I took the chance, and luck was good. Where the Derringer lab used to be is now apparently a deserted warehouse. Everything's dusty and there's not a sign of human occupation."

Stephen's eyes lit up as they approached the long low building of opaque bricks. "Remember, Martha?"

Martha frowned and nodded.

Faint light filtered through the walls to reveal the skeletal outlines of the machine. Brent switched on a light on the panel which gave a dim glow.

"There's not much to see even in a good light," he explained. "Just these two seats—Derringer was planning on teams when he built it, but decided later that one man with responsibility only to himself would do better—and this panel. These instruments are automatic—they adjust to the presence of another machine ahead of you in the time line. The only control the operator bothers with is this." He indicated the double dial set at 2473.

"Why did you choose this year?"

"At random. Derringer set the outer circle at 2400—half a millennium seemed a plausible choice. Then I spun the inner dial blindfolded. When this switch here is turned, you create a certain amount of temporal potential, positive or negative—which is as loose as applying those terms to magnetic poles, but likewise as convenient. For instance if I turn it to here"—he spun the outer dial to 2900—"you'll have five hundred years of positive potential which'll shoot you ahead to 2973. Or set it like this, and you'll have five centuries of negative, which'll pull you back practically to where I started from."

Stephen frowned. "*Ahead and back* be of course nonsense words in this connection. But they may be helpful to Martha in visualizing it. Will you please show Martha the back of your dial?"

"Why?" There was no answer. Brent shrugged and climbed into the seat. The Roman matron moved around the machine and entered the other seat as he loosed the catch on the dial and opened it as one did for oiling.

Stephen said, "Look well, my dear. What be the large wheels marked of?"

"Aceroid, of course. Don't you remember how Alex—"

"Don't remember, Martha. Look. What *be* they?"

Martha gasped. "Why, they . . . they be aluminum."

"Very well. Now don't you understand—*Ssh!*" He broke off and moved toward the doorway. He listened there a moment, then slipped out of sight.

"What does he have?" Brent demanded as he closed the dial. "The ears of an elkhound?"

"Stephen haves hyper-acute sense of hearing. He bees proud of it, and it haves saved us more than once from Stappers. When people be engaged in work against State—"

A man's figure appeared again in the doorway. But its robes were white. "Good God!" Brent exclaimed. "Jiggers, the Staps!"

Martha let out a little squeal. A rod appeared in the Stapper's hand. Brent's eyes were so fixed on the adversary that he did not see the matron's hand move toward the switch until she had turned it.

Brent had somehow instinctively shut his eyes during his first time transit. *During*, he reflected, is not the right word. *At the time of?* Hardly. How can you describe an event of time movement without suggesting another time measure perpendicular to the time line? At any rate, he had shut them in a laboratory in 1942 and opened them an instant later in a warehouse in 2473.

Now he shut them again, and kept them shut. He had to think for a moment. He had been playing with the dial—where was it set when Martha jerked the switch? 1973, as best he remembered. And he had now burst into that world in plastic garments of the twenty-fifth century, accompanied by a Roman matron who had in some time known him for fifty years.

He did not relish the prospect. And besides he was bothered by that strange jerking, tearing sensation that had twisted his body when he closed his eyes. He had felt nothing whatsoever on his previous trip. Had something gone wrong this time? Had—

"It doesn't work!" said Martha indignantly.

Brent opened his eyes. He and Martha sat in the machine in a dim warehouse of opaque brick.

"We be still here," she protested vigorously.

"Sure we're still here." Brent frowned. "But what you mean is, we're still *now*."

"You talk like Stephen. What do you mean?"

"Or are we?" His frown deepened. "If we're still now,

where is that Stapper? He didn't vanish just because you pulled a switch. How old is this warehouse?"

"I don't know. I think about sixty years. It beed fairly new when I beed a child. Stephen and I used to play near here."

"Then we could have gone back a few decades and still be here. Yes, and look—those cases over there. I'd swear they weren't here before. After. Whatever. *Then*, when we saw the Stapper." He looked at the dial. It was set to 1973. And the warehouse was new some time around 2420.

Brent sat and stared at the panel.

"What bees matter?" Martha demanded. "Where be we?"

"Here, same like always. But what bothers me is just *when* we are. Come on; want to explore?"

Martha shook her head. "I want to stay here. And I be afraid for Stephen. Doed Stappers get him? Let's go back."

"I've got to check up on things. Something's gone wrong, and Derringer'll never forgive me if I don't find out what and why. You stay here if you want."

"Alone?"

Brent suppressed several remarks concerning women, in the abstract and the particular. "Stay or go, I don't care. I'm going."

Martha sighed. "You have changed so, John—"

In front of the warehouse was an open field. There had been buildings there when Brent last saw it. And in the field three young people were picnicking. The sight reminded Brent that it was a long time since he'd eaten.

He made toward the trio. There were two men and a girl. One man was blond, the other and the girl were brilliantly red-headed. The girl had much more than even that hair to recommend her. She— Brent's eyes returned to the red-headed man. There was no mistaking those deep brown eyes, that sharp and noble nose. The beard was scant, but still there was no denying—

Brent sprang forward with an eager cry of "Stephen!"

The young man looked at him blankly. "Yes," he said politely. "What do you want?"

Brent mentally kicked himself. He had met Stephen in advanced age. What would the Stephen of twenty know of him? And suddenly he began to understand a great deal. The confusion of that first meeting started to fade away.

"If I tell you," he said rapidly, "that I know that you be Stephen, that you have sister Martha, that you drink bond

despite Stappers, and that you doubt wisdom of Barrier, will you accept me as a man you can trust?"

"Cosmic eons!" the blond young man drawled. "Stranger knows plenty, Stephen. If he bees Stapper, you'll have your mind changed."

The scantily bearded youth looked a long while into Brent's eyes. Then he felt in his robe, produced a flask and handed it over. Brent drank and returned it. Their hands met in a firm clasp.

Stephen grinned at the others. "My childs, I think stranger brings us adventure. I feel like someone out of novel by Varnichek." He turned to Brent. "Do you know these others, too?"

Brent shook his head.

"Krasna and Alex. And your name?"

"John Brent."

"And what can we do for you, John?"

"First tell me year."

Alex laughed, and the girl smiled. "And how long have you beed on a bonder?" Alex asked.

A bonder, Brent guessed, would be a bond bender. "This bees my first drink," he said, "since 1942. Or perhaps since 2473, according as how you reckon."

Brent was not disappointed in the audience reaction this time.

It's easy to see what must have happened, Brent wrote that night in the first entry of the journal Derringer had asked him to keep. He wrote longhand, an action that he loathed. The typewriter which Stephen had kindly offered him was equipped with a huge keyboard bearing the forty-odd characters of the Farthing phonetic alphabet, and Brent declined the loan.

We're at the first Barrier—the one that failed. It was dedicated to Cosmos and launched this afternoon. My friends were among the few inhabitants not ecstatically present at the ceremony. Since then they've collected reports for me. The damned contrivance had to be so terrifically overloaded that it blew up. Dyce-Farnsworth was killed and will be a holy martyr to Cosmos forever.

But in an infinitesimal fraction of a second between the launching and the explosion, the Barrier existed. That was enough.

If you, my dear Dr. Derringer, were ever going to see this

journal, the whole truth would doubtless flash instantaneously through your mind like the lightning in the laboratory of the Mad Scientist. (And why couldn't I have met up with a Mad Scientist instead of one who was perfectly sane and accurate . . . up to a point? Why, Dr. Derringer, you fraud, you didn't even have a daughter!)

But since this journal, faithfully kept as per your instructions, is presumably from now on for my eyes alone, I'll have to try to make clear to my own uninspired mind just what gives with this Barrier, which broke down, so that it can't protect the Stasis, but still irrevocably stops me from going back.

Any instant in which the Barrier exists is impassable: a sort of roadblock in time. Now to achieve Dyce-Farnsworth's dream of preventing all time travel, the Barrier would have to go on existing forever, or at least into the remote future. Then as the Stasis goes on year by year, there'd always be a Barrier-instant ahead of it in time protecting it. Not merely one roadblock, but a complete abolition of traffic on the road.

Now D-F has failed. The future's wide open. But there in the recent past, at the instant of destruction, is the roadblock that keeps me, my dear Dr. Derringer, from ever beaming on your spade beard again.

Why does it block me? I've been trying to find out. Stephen is good on history, but lousy on science. The blond young Alex reverses the combination. From him I've tried to learn the theory back of the Barrier.

The Barrier established in that fractional second, a powerful magnetic field in the temporal dimension. As a result, any object moving along the time line is cutting the magnetic field. Hysteresis sets up strong eddy currents which bring the object, in this case me, to an abrupt halt. Cf. that feeling of twisting shock that I had when my eyes were closed.

I pointed out to Alex that I must somehow have crossed this devilish Barrier in going from 1942 to 2473. He accounts for that apparent inconsistency by saying that I was then traveling with the time stream, though at a greater rate; the blockage lines of force were end-on and didn't stop me.

Brent paused and read the last two paragraphs aloud to the young scientist who was tinkering with the traveling machine. "How's that, Alex? Clear enough?"

"It will do." Alex frowned. "Of course we need whole new vocabulary for temporal concepts. We fumble so helplessly in

analogies—" He rose. "There bees nothing more I can do for this now. Tomorrow I'll bring out some tools from shop, and see if I can find some acreoid gears."

"Good man. I may not be able to go back in time from here; but one thing I can do is go forward. Forward to just before they launch that second Barrier. I've got a job to do."

Alex gazed admiringly at the machine. "Wonderful piece of work. Your Dr. Derringer bees great man."

"Only he didn't allow for the effects of tempo-magnetic hysteresis on his mechanism. Thank God for you, Alex."

"Willn't you come back to house?"

Brent shook his head. "I'm taking no chances on curious Stappers. I'm sticking here with Baby. See that the old lady's comfortable, will you?"

"Of course. But tell me; who bees she? She willn't talk at all."

"Nobody. Just a temporal hitchhiker."

Martha's first sight of the young Stephen had been a terrible shock. She had stared at him speechlessly for long minutes, and then gone into a sort of inarticulate hysteria. Any attempt at explanation of her status, Brent felt, would only make matters worse. There was nothing to do but leave her to the care—which seemed both tender and efficient—of the girl Krasna, and let her life ride until she could resume it normally in her own time.

He resumed his journal.

Philological notes: Stapper, as I should have guessed, is a corruption of Gestapo. Slanduch, which poor Starvel suggested I might be, had me going for a bit. Asking about that, learned that there is more than one State. This, the smuggest and most fanatical of them all, embraces North America, Australia and parts of Eastern Asia. Its official language is, of course, Farthingized English. Small nuclear groups of English-speaking people exist in the other States, and have preserved the older and irregular forms of speech. (Cf. American mountaineers, and Spanish Jews in Turkey.) A Slanduch belongs to such a group.

It took me some time to realize the origin of this word, but it's obvious enough: Auslandsdeutsche, the Germans who existed similarly cut off from the main body of their culture. With these two common loan words suggesting a marked domination at some time of the German language, I asked

Alex—and I must confess almost fearfully—“Then did Germany win the war?”

He not unnaturally countered with, “Which war?”

“The Second World War. Started in 1939.”

“Second?” Alex paused. “Oh, yes. Stephen once told me that they—you used to have numbers for wars before historians simply called 1900’s Century of Wars. But as to who won which . . . who remembers?”

Brent paused, and wished for Stephen’s ears to determine the nature of that small noise outside. Or was it pure imagination? He went on:

These three—Stephen, Alex and Krasna—have proved to be the ideal hosts for a traveler of my nature. Any devout believer in Cosmos, any loyal upholder of the Stasis would have turned me over to the Stappers for my first slip in speech or ideas.

They seem to be part of what corresponds to the Underground Movements of my own century. They try to accomplish a sort of boring from within, a subtle sowing of doubts as to the Stasis. Eventually they hope for more positive action; so far it is purely mental sabotage aimed at—

It was a noise. Brent set down his stylus and moved along the wall as quietly as possible to the door. He held his breath while the door slid gently inward. Then as the figure entered, he pounced.

Stappers have close-cropped hair and flat manly chests. Brent released the girl abruptly and muttered a confused apology.

“It bees only me,” she said shyly. “Krasna. Doed I startle you?”

“A bit,” he confessed. “Alex and Stephen warned me what might happen if a Stapper stumbled in here.”

“I be sorry, John.”

“It’s all right. But you shouldn’t be wandering around alone at night like this. In fact, you shouldn’t be mixed up in this at all. Leave it to Stephen and Alex and me.”

“Mans!” she pouted. “Don’t you think womans have any right to fun?”

“I don’t know that fun’s exactly the word. But since you’re here, milady, let me extend the hospitality of the camp. Alex

left me some bond. That poison grows on you. And tell me, why's it called that?"

"Stephen telled me once, but I can't— Oh yes. When they prohibited all drinking because drinking makes you think world bees better than it really bees and of course if you make yourself different world that bees against Stasis and so they prohibited it but they kepted on using it for medical purposes and that beed in warehouses and pretty soon no one knowed any other kind of liquor so it bees called bond. Only I don't see why."

"I don't suppose," Brent remarked, "that anybody in this century has ever heard of one Gracie Allen, but her spirit is immortal. The liquor in the warehouses was probably kept under government bond."

"Oh—" she said meekly. "I'll remember. You know everything, don't you?"

Brent looked at her suspiciously, but there was no irony in the remark. "How's the old lady getting on?"

"Fine. She bees sleeping now at last. Alex gived her some dormitin. She bees nice, John."

"And yet your voice sounds worried. What's wrong?"

"She bees so much like my mother, only, of course, I don't remember my mother much because I beed so little when Stappers taked my father and then my mother doedn't live very long but I do remember her some and your old lady bees so much like her. I wish I haved knowed my mother goodlier, John. She beed dear. She—" She lowered her voice in the tone of one imparting a great regret. "She cooked."

Brent remembered their tasteless supper of extracts, concentrates and synthetics, and shuddered. "I wish you had known her, Krasna."

"You know what cooking means? You go out and you dig up roots and you pick leaves off of plants and some people they even used to take animals, and then you apply heat and—"

"I know. I used to be a fair-to-middling cook myself, some five hundred years ago. If you could lead me to a bed of coals, a clove of garlic, and a two-inch steak, milady, I'd guarantee to make your eyes pop."

"Garlic? Steak?" Her eyes were wide with wonder. "What be those?"

Brent explained. For ten minutes he talked of the joys of food, of the sheer ecstatic satisfaction of good eating that

passes the love of woman, the raptures of art, or the wonders of science. Then her questions poured forth.

"Stephen learns things out of books and Alex learns things in lab but I can't do that so goodly and they both make fun of me only you be real and I can learn things from you, John, and it bees wonderful. Tell me—"

And Krasna, with a greedy ear, listened.

"You know," Brent muttered, more to himself than to Krasna as he finished his exposition of life lived unstatically, "I never gave a particular damn about politics, but now I look back at my friends that liked Hitler and my friends that loved Stalin and my friends that thought there was much to be said for Franco . . . if only the boys could avoid a few minor errors like killing Jews or holding purge trials. This was what they all wanted: the Perfect State—the Stasis. God, if they could see—!"

At his feet Krasna stirred restlessly. "Tell me more," she said, "about how womans' garments beed unstatic."

His hands idled over her flowing red hair. "You've got the wrong expert for that, milady. All I remember, with the interest of any red-blooded American boy, is the way knees came and went and breasts came and stayed. You know, I've thought of the first point in favor of Stasis: a man could never catch hell for not noticing his girl's new dress."

"But why?" Krasna insisted. "Why doed they change—*styles*?" He nodded. "—change styles so often?"

"Well, the theory—not that I ever quite believed it—was to appeal to men."

"And I always wear the same dress—well, not *same*, because I always put on clean one every morning and sometimes in evening too—but it always looks same, and every time you see me it will be same and—" She broke off suddenly and pressed her face against his knee.

Gently he tilted her head back and grinned down at her moist eyes. "Look," he said. "I said I never believed it. If you've got the right girl, it doesn't matter what she wears."

He drew her up to him. She was small and warm and soft and completely unstatic. He was at home with himself and with life for the first time in five hundred years.

The machine was not repaired the next day, nor the next. Alex kept making plausible, if not quite intelligible technical excuses. Martha kept to her room and fretted, but Brent rather welcomed the delay. There was no hurry; leaving this

time several days later had no effect on when they reached 2473. But he had some difficulty making that point clear to the matron.

This delay gave him an opportunity to see something of the State in action, and any information acquired was apt to be useful when the time came. With various members of Stephen's informal and illicit group he covered the city. He visited a Church of Cosmos and heard the official doctrine on the failure of the Barrier—the Stasis of Cosmos did not permit time travel, so that even an attempt to prohibit it by recognizing its existence affronted Cosmos. He visited libraries and found only those works which had established or upheld the Stasis, all bound in the same uniform format which the Cosmic Bibliological Committee of 2407 had ordained as ideal and static. He visited scientific laboratories and found brilliant young dullards plodding away endlessly at what had already been established; imaginative research was manifestly perilous.

He heard arid stretches of intolerable music composed according to the strict Farinelli system, which forbade, among other things, any alteration of key or time for the duration of a composition. He went to a solly, which turned out to be a deceptively solid three-dimensional motion picture, projected into an apparently screenless arena (*Memo: ask Alex how?*) giving something the effect of what Little Theater groups in his day called Theater in the Round. But only the images were roundly three-dimensional. The story was a strictly one-dimensional exposition of the glories of Stasis, which made the releases of Ufa or Artkino seem relatively free from propaganda. Brent, however, suspected the author of being an Undergrounder. The villain, even though triumphantly bested by the Stappers in the end, had all the most plausible and best written speeches, some of them ingenious and strong enough to sow doubts in the audience.

If, Brent thought disgustedly, anything could sow doubts in this smug herd of cattle. For the people of the State seemed to take the deepest and most loving pride in everything pertaining to the State and to the Stasis of Cosmos. The churches, the libraries, the laboratories, the music, the sollies, all represented humanity as its highest peak. We have attained perfection, have we not? Then all this bees perfect, and we love it.

"What we need," he expostulated to Alex and Stephen one night, "is more of me. Lots more. Scads of us pouring in

from all ages to light firecrackers under these dopes. Every art and every science has degenerated far worse than anything did in the Dark Ages. Man cannot be man without striving, and all striving is abolished. God, I think if I lived in this age and believed in the Stasis, I'd become a Stapper. Better their arrogant cruelty than the inhuman indifference of everybody else."

"I have brother who bees Stapper," said Stephen. "I do not recommend it. To descend to level of cows and foxes bees one thing. To become jackals bees another."

"I've gathered that those rods paralyze the nerve centers, right? But what happens to you after that?"

"It bees not good. First you be treated according to expert psychoanalytic and psychometric methods so as to alter your concepts and adjust you to Stasis. If that fails you be carefully reduced to harmless idiocy. Sometimes they find mind that bees too strong for treatment. He bees killed, but Stappers play with him first."

"It'll never happen to me." Alex said earnestly. "I be prepared. You see this?" He indicated a minute plastic box suspended around his neck. "It contains tiny amount of radioactive matter sensitized to wavelength of Stappers' rods. They will never change my mind."

"It explodes?"

Alex grinned. "Stay away from me if rods start waving."

"It seems," Brent mused, "as though cruelty were the only human vice left. Games are lost, drinking is prohibited—and that most splendid of vices, imaginative speculation, is unheard of. I tell you, you need lots of me."

Stephen frowned. "Before failure of Barrier, we often wondered why we never seed time travelers. We doubted Charnwood's Law and yet— We decided there beed only two explanations. Either time travel bees impossible, or time travelers cannot be seed or intervene in time they visit. Now, we can see that Barrier stopped all from future, and perhaps you be only one from past. And still—"

"Exactly," said Alex. "And still. If other travelers came from future, why beed they not also stopped by Barrier? One of our friends searched Stapper records since breakdown of Barrier. No report on strange and unidentified travelers anywhere."

"That means only one thing." Stephen looked worried. "Second Barrier, Barrier you telled us of, John, must be successful."

"The hell it will be. Come on, Alex. I'm getting restless. When can I start?"

Alex smiled. "Tomorrow. I be ready at last."

"Good man. Among us, we are going to blow this damned Stasis back into the bliss of manly and uncertain striving. And in fifty years we'll watch it together."

Krasna was waiting outside the room when Brent left. "I knowed you willed be talking about things I doedn't understand."

"You can understand this, milady. Alex has got everything fixed, and we leave tomorrow."

"We?" said Krasna brightly, hopefully.

Brent swore to himself. "We, meaning me and the old lady. The machine carries only two. And I do have to take her back to her own time."

"Poor thing," said Krasna. Her voice had gone dead.

"Poor us," said Brent sharply. "One handful of days out of all of time . . ." For one wild moment a possibility occurred to him. "Alex knows how to work the machine. If he and the old—"

"No," said Krasna gravely. "Stephen sayes you have to go and we will meet you there. I don't understand. . . . But I will meet you, John, and we will be together again and we will talk and you will tell me things like first night we talked and then—"

"And then," said Brent, "we'll stop talking. Like this."

Her eyes were always open during a kiss. (Was this a custom of Stasis, Brent wondered, or her own?) He read agreement in them now, and hand in hand they walked, without another word, to the warehouse, where Alex was through work for the night.

One minor point for the Stasis, Brent thought as he dozed off that night, was that it had achieved perfectly functioning zippers.

"Now," said Brent to Stephen after what was euphemistically termed breakfast, "I've got to see the old lady and find out just what the date is for the proposed launching of the second Barrier."

Stephen beamed. "It bees such pleasure to hear old speech, articles and all."

Alex had a more practical thought. "How can you set it to one day? I thinked your dial readed only in years."

"There's a vernier attachment that's accurate—or should

be, it's never been tested yet—to within two days. I'm allowing a week's margin. I don't want to be around too long and run chances with Stappers."

"Krasna will miss you."

"Krasna's a funny name. You others have names that were in use back in my day."

"Oh, it bees not name. It bees only what everyone calls red-headed girls. I think it goes back to century of Russian domination."

"Yes," Alex added. "Stephen's sister's real name bees Martha, but we never call her that."

John Brent gaped. "I . . . I've got to go see the old lady," he stammered.

From the window of the gray-haired Martha-Krasna he could see the red-headed Krasna-Martha outside. He held on to a solid and reassuring chair and said, "Well, madam, I have news. We're going back today."

"Oh, thank Cosmos!"

"But I've got to find out something from you. What was the date set for the launching of the second Barrier?"

"Let me see—I know it beed holiday. Yes, it beed May 1."

"My, my! May Day a holiday now? Workers of the World Unite, or simply Gathering Nuts in May?"

"I don't understand you. It bees Dyce Farnsworth's birthday, of course. But then I never understand . . ."

In his mind he heard the same plaint coming from fresh young lips. "I . . . I understand now, madam," he said clumsily. "Our meeting—I can see why you—" Damn it, what was there to say?

"Please," she said. There was, paradoxically, a sort of pathetic dignity about her. "I do not understand. Then at littlest let me forget."

He turned away respectfully. "Warehouse in half an hour!" he called over his shoulder.

The young Krasna-Martha was alone in the warehouse when Brent got there. He looked at her carefully, trying to see in her youthful features the worn one of the woman he had just left. It made sense.

"I comed first," she said, "because I wanted to say good-bye without others."

"Good-bye, milady," Brent murmured into her fine red hair. "In a way, I'm not leaving you because I'm taking you with me and still I'll never see you again. And you don't un-

derstand that, and I'm not sure you've ever understood anything I've said, but you've been very sweet."

"And you will destroy Barrier? For me?"

"For you, milady. And a few billion others. And here come our friends."

Alex carried a small box which he tucked under one of the seats. "Dial and mechanism beed repaired days ago," he grinned. "I've beed working on this for you, in lab which I was supposed to be re-proving Tsvetov's hypothesis. Temporal demagnetizer—guaranteed. Bring this near Barrier and field will be broken. Your problem bees to get near Barrier."

Martha, the matron, climbed into the machine. Martha, the girl, turned away to hide watering eyes. Brent set the dial to 2473 and adjusted the vernier to April 24, which gave him a week's grace. "Well, friends," he faltered. "My best gratitude—and I'll be seeing you in fifty years."

Stephen started to speak, and then suddenly stopped to listen. "Quick, Krasna, Alex. Behind those cases. Turn switch quickly, John."

Brent turned the switch, and nothing happened. Stephen and Krasna were still there, moving toward the cases. Alex darted to the machine. "Cosmos blast me! I maked disconnection to prevent anyone's tampering by accident. And now—"

"Hurry, Alex," Stephen called in a whisper.

"Moment—" Alex opened the panel and made a rapid adjustment. "There, John. Good-bye."

In the instant before Brent turned the switch, he saw Stephen and Krasna reach a safe hiding place. He saw a Stapper appear in the doorway. He saw the flicker of a rod. The last thing he saw in 2423 was the explosion that lifted Alex's head off his shoulders.

The spattered blood was still warm in 2473.

Stephen, the seventy-year-old Stephen with the long and parti-colored beard, was waiting for them. Martha dived from the machine into his arms and burst into dry sobbing.

"She met herself," Brent explained. "I think she found it pretty confusing."

Stephen barked: "I can imagine. It bees only now that I have realized who that woman beed who comed with you and so much resembled our mother. But you be so late. I have beed waiting here since I evaded Stappers."

"Alex—" Brent began.

"I know. Alex haves gived you magnetic disruptor and

losed his life. He beed not man to die so young. He beed good friend . . . And my sister haves gived and losed too I think." He gently stroked the gray hair that had once been red. "But these be fifty-year-old sorrows. I have lived with my unwepted tears for Alex; they be friends by now too. And Martha haves weeped her tears for . . ." He paused then: "Why have you beed so long?"

"I didn't want to get here too long before May Day—might get into trouble. So I allowed a week, but I'll admit I might be a day or so off. What date is it?"

"This bees May 1, and Barrier will be launched within hour. We must hurry."

"My God—" Brent glared at the dial. "It can't be that far off. But come on. Get your sister home and we'll plunge on to do our damnedest."

Martha roused herself. "I be coming with you."

"No, dear," said Stephen. "We can do better alone."

Her lips set stubbornly. "I be coming. I don't understand anything that happens, but you be Stephen and you be John, and I belong with you."

The streets were brightly decorated with banners bearing the double loop of infinity, the sacred symbol of Cosmos that had replaced crescent, swastika and cross. But there was hardly a soul in sight. What few people they saw were all hurrying in the same direction.

"Everyone will be at dedication," Stephen explained. "Tribute to Cosmos. Those who stay at home must beware Stappers."

"And if there's hundreds of thousands thronging the dedication, how do we get close to Barrier to disrupt it?"

"It bees all arranged. Our group bees far more powerful than when you knowed it fifty years ago. Slowly we be honeycombing system of State. With bribery and force when necessary, with persuasion when possible, we can do much. And we have arranged this."

"How?"

"You be delegate from European Slanduch. You speak German?"

"Well enough."

"Remember that haves beed regularized, too. But I doubt if you need to speak any. Making you Slanduch will account for irregular slips in English. You come from powerful Slanduch group. You will be gladly welcomed here. You will oc-

cupy post of honor. I have even accounted for box you carry. It bees tribute you have bringed to Cosmos. Here be your papers and identity plaque."

"Thanks." Brent's shorter legs managed to keep up with the long strides of Stephen, who doubled the rate of the moving sidewalk by his own motion. Martha panted along resolutely. "But can you account for why I'm so late? I set my indicator for April 24, and here we are rushing to make a date on May 1."

Stephen strode along in thought, then suddenly slapped his leg and barked. "How many months in 1942?"

"Twelve, of course."

"Ha! Yes, it beed only two hundred years ago that thirteen-month calendar beed adopted. Even months of twenty-eight days each, plus Year Day, which belongs to no month. Order, you see. Now invaluable part of Stasis—" He concentrated frowningly on mental arithmetic. "Yes, your indicator worked exactly. May 1 of our calendar bees April 24 of yours."

Chalk up one slip against Derringer—an unthinking confidence in the durability of the calendar. And chalk up one, for Brent's money, against the logic of the Stasis; back in the twentieth century, he had been an advocate of calendar reform, but a stanch upholder of the four-quarter theory against the awkward thirteen months.

They were nearing now the vast amphitheater where the machinery of the Barrier had been erected. Stappers were stopping the few other travelers and forcing them off the moving sidewalk into the densely packed crowds, faces aglow with the smug ecstasy of the Stasis, but Brent's Slanduch credentials passed the three through.

The representative of the German Slanduch pushed his way into the crowd of eminent dignitaries just as Dyce-Farnsworth's grandson pressed the button. The magnificent mass of tubes and wires shuddered and glowed as the current pulsed through it. Then the glow became weird and arctic. There was a shaking, a groaning, and then, within the space of a second, a cataclysmic roar and a blinding glare. Something heavy and metallic pressed Brent to the ground.

The roar blended into the excited terror of human voices. The splendid Barrier was a mass of twisted wreckage. It was more wreckage that weighted Brent down, but this was different. It looked strangely like a variant of his own machine.

And staring down at him from a warped seat was the huge-eyed head of a naked man.

A woman in a metallic costume equally strange to this age and to Brent's own straddled the body of Dyce-Farnsworth's grandson, who had met his ancestor's martyrdom. And wherever Brent's eyes moved he saw another strange and outlandish—no, out-time-ish—figure.

He heard Martha's voice. "It bees clear that Time Barrier haves been erected and destroyed by outside force. But it haves existed and created impenetrable instant of time. These be travelers from all future."

Brent gasped. Even the sudden appearance of these astounding figures was topped by Martha's speaking perfect logical sense.

Brent wrote in his journal: *The Stasis is at least an admirably functional organism. All hell broke loose there for a minute, but almost automatically the Stappers went into action with their rods—odd how that bit of crook's chant has become perfectly literal truth—and in no time had the situation well in hand.*

They had their difficulties. Several of the time intruders were armed, and managed to account for a handful of Stappers before the nerve rays paralyzed them. One machine was a sort of time-traveling tank and contrived to withstand siege until a suicide squad of Stappers attacked it with a load of what Stephen tells me was detonite; we shall never know from what sort of a future the inhabitants of that tank came to spatter their shredded flesh about the amphitheater.

But these events were mere delaying action, token resistance. Ten minutes after the Barrier had exploded, the travelers present were all in the hands of the Stappers, and cruising Stapper bands were efficiently combing all surrounding territory.

(The interesting suggestion comes amazingly from Martha that while all time machines capable of physical movement were irresistibly attracted to the amphitheater by the tempo-magnetic field, only such pioneer and experimental machines as my Derringer, which can move only temporally, would be arrested in other locations. Whether or not this theory is correct, it seems justified by the facts. Only a few isolated reports have come in of sudden appearances elsewhere at the instant of the Barrier's explosion; the focus of arrivals of the time travelers was the amphitheater.)

The Chief of Stappers mounted the dais where an infinity-bedecked banner now covered the martyred corpse of young Dyce-Farnsworth, and announced the official ruling of the Head of State: that these intruders and disrupters of the Stasis were to be detained—tested and examined and studied until it became apparent what the desire of Cosmos might be.

(The Head of State, Stephen explained, is a meaningless figurehead, part high priest and—I paraphrase—part Alexander Throttlebottom. The Stasis is supposedly so perfect and so self-sustaining that his powers are as nominal as those of the pilot of a ship in drydock, and all actual power is exercised by such subordinates as the Editor of State and the Chief of Stappers.)

Thanks to Stephen's ingenuity, this rule for the treatment of time travelers does not touch me. I am simply a Slanduch envoy. Some Stapper search party has certainly by now found the Derringer machine in the warehouse, which I no longer dare approach.

With two Barriers now between me and 1942, it is obvious that I am keeping this journal only for myself. I am stuck here—and so are all the other travelers, for this field, far stronger than the first, has wrecked their machines beyond the repairing efforts of a far greater talent than poor Alex. We are all here for good.

And it must be for good.

I still believe firmly what I said to Stephen and Alex: that this age needs hundreds of me to jolt it back into humanity. We now have, if not hundreds, at least dozens, and I, so far as we yet know, am the only one not in the hands of the Stappers. It is my clearest duty to deliver those others, and with their aid to beat some sense into this Age of Smugness.

"But how?" Brent groaned rhetorically. "How am I going to break into the Stappers' concentration camp?"

Martha wrinkled her brows. "I think I know. Let me work on problem while longer; I believe I see how we can at littlest make start."

Brent stared at her. "What's happened to you, madam? Always before you've shrunk away from every discussion Stephen and I have had. You've said we talk of things you know nothing about. And now, all of a sudden—boom!—you're right in the middle of things and doing very nicely thank you. What's got into you?"

"I think," said Martha smiling, "you have hitted on right phrase, John."

Brent's puzzled expostulation was broken off by Stephen's entrance. "And where have you been?" he demanded. "I've been trying to work out plans, and I've got a weird feeling Martha's going to beat me to it. What have you been up to?"

Stephen looked curiously at his sister. "I've beed out galping. Interesting results, too."

"Galping?"

"You know. Going about among people, taking samples of opinion, using scientific methods to reduce carefully choosed samples to general trends."

"Oh." (Mr. Gallup thought Brent, has joined Captain Boycott and M. Guillotin as a verb.) "And what did you learn?"

"People be confused by arrival of time travelers. If Stasis bees perfect, they argue; why be such arrivals allowed? Seeds of doubt be sowed, and we be carefully watering them. Head of State haves problem on his hands. I doubt if he can find any solution to satisfy people."

"If only," Brent sighed, "there were some way of getting directly at the people. If we could see these travelers and learn what they know and want, then somehow establish contact between them and the people, the whole thing ought to be a pushover."

It was Martha who answered. "It bees very simple, John. You be linguist."

"Yes. And how does that—"

"Stappers will need interpreters. You will be one. From there on you must develop your own plans, but that will at littlest put you in touch with travelers."

"But the State must have its own linguists who—"

Stephen barked with pleasure and took up the explanation. Since Farthing's regularization of English, the perfect immutability of language had become part of the Stasis. A linguist now was a man who knew Farthing's works by heart, and that was all. Oh, he might also be well acquainted with Zinsmeister German, or Tamayo y Sárate Spanish; but he knew nothing of general linguistic principles, which are apt to run completely counter to the fine theories of these great synthetists, and he had never had occasion to learn adaptability to a new language. Faced by the strange and incomprehensible tongues of the future, the State linguist would be helpless.

It was common knowledge that only the Slanduch had any true linguistic aptitude. Brought up to speak three lan-

guages—Farthing-ized English, their own archaic dialect, and the language of the country in which they resided—their tongues were deft and adjustable. In ordinary times, this aptitude was looked on with suspicion; but now there would doubtless be a heavy demand for Slanduch interpreters, and a little cautious wire-pulling could land Brent the job.

"And after that," said Stephen, "as Martha rightly observes, you be on your own."

"Lead me to it," grinned John Brent.

The rabbitty little State linguist received Brent effusively. "Ah, thank Cosmos!" he gasped. "Travelers be driving me mad! Such gibberish you have never heard! Such irregularities! Frightful! You be Slanduch?"

"I be. I have speaked several languages all my life. I can even speak pre-Zinsmeister German." And he began to recite *Die Lorelei*. "*Die Luft ist kühl und es dunkelt, und ruhig fließt der Rhein—*"

"Terrible! *Ist!* Such vile irregularity! And articles! But come, young man. We'll see what you can do with these temporal barbarians!"

There were three travelers in the room Brent entered, with the shocked linguist and two rodded Stappers in attendance. One of the three was the woman he had noticed in that first cataclysmic instant of arrival, a strapping Amazonic blonde who looked as though she could break any two unarmed Stappers with her bare fingers. Another was a neat little man with a curly and minute forked beard and restless hands. The third—

The third was hell to describe. They were all dressed now in the conventional robes of the Stasis, but even in these familiar garments he was clearly not quite human. If man is a featherless biped, then this was a man; but men do not usually have greenish skin with vestigial scales and a trace of a gill opening behind each ear.

"Ask each of them three things," the linguist instructed Brent. "When he comes from, what his name bees, and what be his intentions."

Brent picked Tiny Beard as the easiest looking start. "O. K. You!" He pointed, and the man stepped forward. "What part of time do you come from?"

"A pox o' thee, sirrah, and the goodyears take thee! An thou wouldst but hearken, thou might'st learn all."

The State linguist moaned. "You hear, young man? How can one interpret such jargon?"

Brent smiled. "It bees O. K. This bees simply English as it beed speaked thousand years ago. This man must have beed aiming at earlier time and prepared himself . . . Thy pardon, sir. These kerns deem all speech barbaric save that which their own conceit hath evolved. Bear with me and all will be well."

"Spoken like a true knight!" the traveler exclaimed. "Forgive my rash words, sir. Surely my good daemon hath led thee hither. Thou wouldst know—"

"Whence comest thou?"

"From many years hence. Thousands upon thousands of summers have yet to run their course ere I—"

"Forgive me, sir; but of that much we are aware. Let us be precise."

"Why then, marry, sir, 'tis from the fifth century."

Brent frowned. But to attempt to understand the gentleman's system of dating would take too much time at the moment. "And thy name, sir?"

"Kruj, sir. Or as thou wouldst be formal and courtly, Kruj Krujil Krujilar. But let Kruj suffice thee."

"And what most concerneth these gentlemen here is the matter of thine intentions. What are thy projects in this our earlier world?"

"My projects?" Kruj coughed. "Sir, in thee I behold a man of feeling, of sensibility, a man to whom one may speak one's mind. Many projects have I in good sooth, most carefully projected for me by the Zhurmandril. Much must I study in these realms of the great Elizabeth—though 'sblood! I know not how they seem so different from my conceits! But one thing above all else do I covet. I would to the Mermaid Tavern."

Brent grinned. "I fear me, sir, that we must talk at greater length. Much hast thou mistaken and much must I make clear. But first I must talk with these others."

Kruj retired, frowning and plucking at his shred of beard. Brent beckoned to the woman. She strode forth so vigorously that both Stappers bared their rods.

"Madam," Brent ventured tentatively, "what part of time do you come from?"

"Evybuy taws so fuy," she growled. "Bu I unnasta. Wy cachoo unnasta *me*?"

Brent laughed. "Is that all that's the trouble? You don't mind if I go on talking like this, do you?"

"Naw. You taw howeh you wanna, slonsoo donna like I dih taw stray."

Fascinating, Brent thought. All final consonants lost, and many others. Vowels corrupted along lines indicated in twentieth-century colloquial speech. Consonants sometimes restored in liaison as in French.

"What time do you come from, then?"

"Twenny-ni twenny-fie. N were am I now?"

"Twent-four seventy-three. And your name, madam?"

"Mimi."

Brent had an incongruous vision of this giantess dying operatically in a Paris garret. "So. And your intentions here?"

"Ai gonno intenchuns. Juh wanna see wha go."

"You will, madam, I assure you. And now—" He beckoned to the green-skinned biped, who advanced with a curious lurching motion like a deep-sea diver.

"And you, sir. When do you come from?"

"Ya studier langue earthly. Vyerit todo langue isos. Ou comprendo wie govorit people."

Brent was on the ropes and groggy. The familiarity of some of the words made the entire speech even more incomprehensible. "Says which?" he gasped.

The green man exploded. "Ou existier nada but dolts, cochons, duraki v this terre? Nikovo parla langue earthly? Potztausend Sapperment en la leche de tu madre and I do mean you!"

Brent reeled. But even reeling he saw the disapproving frown of the State linguist and the itching fingers of the Stappers. He faced the green man calmly and said with utmost courtesy, "'Twas brillig and the slithy toves did gyre and gimble over the rivering waters of the hither-and-thithering waters of pigeons on the grass alas." He turned to the linguist. "He says he won't talk."

Brent wrote in the never-to-be-read journal: *It was Martha again who solved my green man for me. She pointed out that he was patently extraterrestrial. (Apparently Nakamura's Law of Spatial Acceleration is as false as Charnwood's Law of Temporal Metabolism.) The vestigial scales and gills might well indicate Venus as his origin. He must come from some far distant future when the earth is overrun by inhabitants of other planets and terrestrial culture is all but lost. He had*

prepared himself for time travel by studying the speech of earth—langue earthly—reconstructed from some larger equivalent of the Rosetta Stone, but made the mistake of thinking that there was only one earthly speech, just as we tend imaginatively to think of Martian or Venusian as a single language. As a result, he's talking all earthly tongues at once. Martha sees a marked advantage in this, even more than in Mimi's corrupt dialect—

"Thou, sir," said Brent to Kruj on his next visit, "art a linguist. Thou knowest speech and his nature. To wit, I would wager that thou couldst with little labor understand this woman here. One who hath so mastered our language in his greatest glory—"

The little man smirked. "I thank thee sir. In sooth since thou didst speak with her yestereven I have already made some attempts at converse with her."

Mimi joined in. "He taws fuy, but skina cue."

"Very well then. I want you both, and thee in particular, Kruj, to hearken to this green-skinned varlet here. Study his speech, sir, and learn what thou may'st."

"Wy?" Mimi demanded belligerently.

"The wench speaks sooth. Wherefore should we so?"

"You'll find out. Now let me at him."

It was slow, hard work, especially with the linguist and the Stappers ever on guard. It meant rapid analysis of the possible origin of every word used by the Venusian, and a laborious attempt to find at random words that he would understand. But in the course of a week both Brent and the astonishingly adaptable Kruj had learned enough of this polyglot *langue earthly* to hold an intelligible conversation. Mimi was hopelessly lost, but Kruj occasionally explained matters to her in her own corrupt speech, which he had mastered by now as completely as Elizabethan.

It had been Stephen's idea that any project for the liberation of the time travelers must wait until more was learned of their nature. "You be man of good will, John. We trust you. You and mans like you can save us. But imagine that some travelers come from worlds far badder even than ours. Suppose that they come seeking only power for themselves? Suppose that they come from civilization of cruelty and be more evil than Stappers?"

It was a wise point, and it was Martha who saw the solution in the Venusian's amazing tongue. In that mélange of

languages, Brent could talk in front of the linguist and the Stappers with complete safety. Kruj and the Venusian, who must have astonishing linguistic ability to master the speech of another planet even so perversely, could discuss matters with the other travelers, and could tell him anything he needed to know before all the listening guards of the State.

All this conversation was, of course, theoretically guided by the linguist. He gave questions to Brent and received plausible answers, never dreaming that his questions had not been asked.

As far as his own three went, Brent was satisfied as to the value of their liberation. Mimi was not bright, but she seemed to mean well and claimed to have been a notable warrior in her own matriarchal society. It was her feats in battle and exploration that had caused her to be chosen for time travel. She should be a useful ally.

Kruj was indifferent to the sorry state of the world until Brent mentioned the tasteless and servile condition of the arts. Then he was all afire to overthrow the Stasis and bring about a new renaissance. (Kruj, Brent learned, had been heading for the past to collect material for a historical epic on Elizabethan England, a fragment of prehistoric civilization that had always fascinated him.)

Of the three, Nikobat, the Venusian, seemed the soundest and most promising. To him, terrestrial civilization was a closed book, but a beautiful one. In the life and struggles of man he found something deep and moving. The aim of Nikobat in his own world had been to raise his transplanted Venusian civilization to the levels, spiritual and scientific, that had once been attained by earthly man and it was to find the seed of inspiration to accomplish this that he had traveled back. Man degenerate, man self-complacent, man smug, shocked him bitterly, and he swore to exert his best efforts in the rousing.

Brent was feeling not displeased with himself as he left his group after a highly successful session. Kruj was accomplishing much among the other travelers and would have a nearly full report for him tomorrow. And once that report had been made, they could attempt Martha's extraordinary scheme of rescue. He would not have believed it ordinarily possible, but both he and Stephen were coming to put more and more trust in the suggestions of the once scatterbrained Martha. Stephen's own reports were more than favorable. The Underground was boring beautifully from within. The people of the

State were becoming more and more restless and doubting. Slowly these cattle were resuming the forms of men.

Brent was whistling happily as he entered the apartment and called out a cheery "Hi!" to his friends. But they were not there. There was no one in the room but a white-clad Stapper, who smiled wolfishly as he rose from a chair and asked, "You be time traveler, be you not?"

This was the most impressive Stapper that Brent had yet seen—impressive even aside from the startling nature of his introductory remark. The others, even the one he had kicked in the face, or the one who killed Alex, Brent had thought of simply as so many Stappers. This one was clearly an individual. His skin was exceptionally dark and smooth and hairless, and two eyes so black that they seemed all pupil glowed out of his face.

Brent tried to seem casual. "Nonsense. I be Slanduch envoy from Germany, staying here with friends and doing service for State. Here bees my identification."

The Stapper hardly glanced at it. "I know all about your linguistic services, John Brent. And I know about machine finded in deserted warehouse. It beed only machine not breaked by Barrier. Therefore it comed not from Future, but from Past."

"So? We have travelers from both directions? Poor devil will never be able to get back to own time then." He wondered if this Stapper were corruptible; he could do with a drink of bond.

"Yes, he bees losed here in this time like others. And he foolishly works with them to overthrow Stasis."

"Sad story. But how does it concern me? My papers be in order. Surely you can see that I be what I claim?"

The Stapper's eyes fixed him sharply. "You be clever, John Brent. You doubtless traveled naked and clothed yourself as citizen of now to escape suspicion. That bees smartest way. How you getted papers I do not know. But communication with German Slanduch will disprove your story. You be losed, Brent, unless you be sensible."

"Sensible? What the hell do you mean by that?"

The Stapper smiled slowly. "Article," he drawled.

"I be sorry. But that proves nothing. You know how difficult it bees for us Slanduch to keep our speech entirely regular."

"I know." Suddenly a broad grin spread across the Stap-

per's face and humanized it. "I have finded this Farthing speech hellishly difficult myself."

"You mean you, too, be Slanduch?"

The Stapper shook his head. "I, too, Brent, be traveler."

Brent was not falling for any such trap. "Ridiculous! How can traveler be Stapper?"

"How can traveler be Slanduch envoy? I, too, traveled naked, and man whose clothes and identification I stealed beed Stapper. I have finded his identity most useful."

"I don't believe you."

"You be stubborn, Brent. How to prove—" He gestured at his face. "Look at my skin. In my century facial hair haves disappeared; we have breeded away from it. Where in this time could you find skin like that?"

"A sport. Freak of chromosomes."

The black eyes grew even larger and more glowing. "Brent, you must believe me. This bees no trap for you. I need you. You and I, we can do great things. But how to convince you"—he snapped his fingers. "I know!" He was still for a moment. The vast eyes remained opened but somehow veiled, as though secret calculations were going on behind them. His body shivered. For a moment of strange delusion Brent thought he could see the chair through the Stapper's body. Then it was solid again.

"My name," said the Stapper, with the patience of a professor addressing a retarded class, "bees Bokor. I come from tenth century after consummation of terrestrial unity, which bees, I believe, forty-third reckoning from date of birth of Christian god. I have traveled, not with machine, but solely by use of Vunmurd formula, and, therefore, I alone of all travelers stranded here can still move. Hysteresis of Barrier arrests me, but cannot destroy my formula as it shatters machines."

"Pretty story."

"Therefore I alone of travelers can still travel. I can go back by undestroyed formula and hit Barrier again. If I hit Barrier twice, I exist twice in that one point of time. Therefore each of two of me continues into present."

"So now you be two?" Brent observed skeptically. "Obviously I be too sober. I seem to be seeing single."

Bokor grinned again. Somehow this time it didn't seem so humanizing. "Come in!" he called.

The Stapper in the doorway fixed Brent with his glowing black eyes and said, "Now do you believe that I be traveler?"

Brent gawped from one identical man to the other. The one in the doorway went on. "I need you."

"It isn't possible. It's a gag. You're twin Stappers, and you're trying to—"

Bokor in the chair said, "Do I have to do it again?"

Brent said, "You may both be Stappers. You may turn out to be a whole damned regiment of identical multiple births. I don't giye a damn; I want some bond. How about you boys?"

The two Bokors downed their drinks and frowned. "Weak," they said.

Brent shook his head feebly. "All right. We'll skip that. Now what the sweet hell do you need me for?"

Bokor closed his eyes and seemed to doze. Bokor Sub-One said, "You have plans to liberate travelers and overthrow Stasis. As Stapper I have learned much. I worked on changing mind of one of you Underground friends."

"And you want to throw your weight in with us? Good, we can use a Stapper. Or two. But won't the Chief of Stappers be bothered when he finds he has two copies of one man?"

"He will never need to see more than one. Yes, I want to help you—up to a point. We will free travelers. But you be innocent, Brent. We will not overthrow Stasis. We will maintain it—as ours."

Brent frowned. "I'm not sure I get you. And I don't think I like it if I do."

"Do not be fool, Brent. We have opportunity never before gived to man, we travelers. We come into world where already exists complete and absolute State control, but used stupidly and to no end. Among us all we have great knowledge and power. We be seed sowed upon fallow ground. We can spring up and ungulf all about us." The eyes glowed with black intensity. "We take this Stasis and mold it to our own wishes. These dolts who now be slaves of Cosmos will be slaves of us. Stapper, whose identity I have, bees third in succession to Chief of Stappers. Chief and other two will be killed accidentally in revolt of travelers. With power of all Stappers behind me, I make you Head of State. Between us we control this State absolutely."

"Nuts," Brent snorted. "The State's got too damned much control already. What this world needs is a return to human freedom and striving."

"Innocent," Bokor Sub-One repeated scornfully. "Who gives damn what world needs? Only needs which concern man be his own, and his strongest need bees always for

power. Here it bees gived us. Other States be stupid and self-complacent like this. We know secrets of many weapons, we travelers. We turn our useless scholastic laboratories over to their production. Then we attack other States and subject them to us as vassals. And then the world itself bees ours, and all its riches. Alexander, Caesar, Napoleon, Hitler, Gospodinov. Tirazhul—never haves world knowed conquerors like us."

"You can go to hell," said Brent lightly but firmly. "All two of you."

"Do not be too clever, my friend. Remember that I be Stapper and can—"

"You be two Stappers, which may turn out to be a little awkward. But you could be a regiment of Stappers, and I still wouldn't play ball. Your plan stinks, Bokor, and you know what you can do with it."

Bokor Sub-One took the idiom literally. "Indeed I do know, Brent. It willed have beed easier with your aid, but even without you it will succeed." He drew out his rod and contemplated it reflectively. "No," he murmured, "there bees no point to taking you in and changing your mind. You be harmless to me, and your liberation of travelers will be useful."

The original Bokor opened his eyes. "We will meet again, Brent. And you will see what one man with daring mind can accomplish in this world." Bokor and Bokor Sub-One walked to the door and turned. "And for bond," they spoke in unison, in parody of the conventional Stapper's phrase, "State thanks you."

Brent stood alone in the room, but the black-eyed domination of the two Bokors lingered about him. The plan was so damned plausible, so likely to succeed if put into operation. Man has always dreamed of power. But damn it, man has always dreamed of love, too, and of the rights of his fellow man. The only power worthy of man is the power of all mankind struggling together toward a goal of unobtainable perfection.

And what could Bokor do against Kruj and Mimi and Nikobat and the others that Kruj reported sympathetic?

Nevertheless there had been a certainty in those vast eyes that the double Bokor knew what he could do.

The release of the travelers was a fabulous episode. Stephen had frowned and Brent had laughed when Martha said

simply, "Only person who haves power to release them bees Head of State by will of Cosmos. Very well. We will persuade him to do so." But she insisted, and she had been so uncannily right ever since the explosion of the second Barrier that at last, when Kruj had made his final report, Brent accompanied her on what he was certain was the damnedest fool errand he'd got himself into yet.

Kruj's report was encouraging. There were two, perhaps three, among the travelers who had Bokorian ideas of taking over the State for their own purposes. But these were far outweighed by the dozens who saw the tremendous possibilities of a reawakening of mankind. The liberation was proved a desirable thing, but why should the Head of State so readily loose disrupters of his Stasis?

Getting to see the Head of State took the best part of a day. There were countless minor officials to be interviewed, all of them guarded by Stappers who looked upon the supposed Slanduch envoy with highly suspicious eyes. But one by one, with miraculous consistency, these officials beamed upon Brent's errand and sent him on with the blessing of Cosmos.

"You wouldn't like to pinch me?" he murmured to Martha after the fifth such success. "This works too easy. It can't be true."

Martha looked at him blankly and said, "I don't understand it. But what be we going to say?"

Brent jumped. "Hey! Look, madam. This was all your idea. You were going to talk the Head of State into—"

But a Stapper was already approaching to conduct them to the next office, and Brent fell silent.

It was in the anteroom of the Head of State that they met Bokor. Just one of him this time. He smiled confidentially at Brent and said, "Shocking accident today. Stapper killed in fight with prisoner. Odd thing—Stapper been second in succession to Chief of Stappers."

"You're doing all right," said Brent.

"I be curious to see what you plan here. How do you hope to achieve this liberation? I talked with Head of State yesterday and he bees strongly opposed."

"Brother," said Brent sincerely, "I wish I knew."

In a moment Bokor ushered them into the sanctum sanctorum of the Head of State. This great dignitary was at first glance a fine figure of a man, tall and well built and noble. It was only on second glance that you noticed the weak lips and

the horribly empty eyes. The stern and hawk-nosed Chief of Stappers stood beside him.

"Well!" the latter snapped. "Speak your piece!"

Brent faltered and glanced at Martha. She looked as vacant and helpless as ever she had before the Barrier. He could only fumble on and pray that her unrevealed scheme would materialize.

"As you know, sir," he began, "I, as interpreter, have been in very close contact with travelers. Having in my mind good of Cosmos and wishing to see it as rich and fully developed as possible, it seems to me that much may be accomplished by releasing travelers so that they may communicate with people." He gulped and swore at himself for venturing such an idiotic request.

The empty eyes of the Head of State lit up for a moment. "Excellent idea," he boomed in a dulcet voice. "You have permission of State and Cosmos. Chief, I give orders that all travelers be released."

Brent heard Bokor's incredulous gasp behind him. The Chief of Stappers muttered "Cosmos!" fervently. The Head of State looked around him for approval and then reverted to formal vacancy.

"I thank State," Brent managed to say, "for this courageous move."

"What becs courageous?" the Head demanded. His eyes shifted about nervously. "What have I doed? What have I sayed?"

The Chief of Stappers bowed. "You have proclaimed freedom of travelers. May I, too, congratulate you on wisdom of action?" He turned to Bokor. "Go and give necessary orders."

Martha did not say a word till they were outside. Then she asked, "What happened? Why in Cosmos' name doed he consent?"

"Madam, you have me there. But you should know. It was all your idea."

Understanding came back to her face. "Of course. It becs time now that you know all about me. But wait till we be back in apartment. Stephen haves right to know this, too. And Martha," Martha added.

They had left Bokor behind them in the sanctum, and they met Bokor outside the building. That did not worry Brent, but he was admittedly perturbed when he passed a small

group of people just off the sidewalk and noticed that its core was a third Bokor. He pulled Martha off the moving path and drew near the group.

Bokor was not being a Stapper this time. He was in ordinary iridescent robes. "I tell you I know," he was insisting vigorously. "I am . . . I be Slanduch from State of South America, and I can tell you deviltry they be practicing there. Armament factories twice size of laboratories of Cosmos. They plan to destroy us; I know."

A Stapper shoved his way past Brent. "Here now!" he growled. "What bees going on here?"

Bokor hesitated. "Nothing, sir. I was only—"

"Was, huh?"

"Pardon, sir. *Beed*. I be Slanduch, you see, and—"

One of the men in the crowd interrupted. "He beed telling us what all State needs to know—plans of State of South America to invade and destroy us."

"Hm-m-m!" the Stapper ejaculated. "You be right, man. That sounds like something to know. Go on, you."

Bokor resumed his rumor mongering, and the Stapper lent it official endorsement by his listening silence. Brent moved to get a glimpse of the Stapper's face. His guess was right. It was another Bokor.

This significant byplay had delayed them enough so that Brent's three travelers had reached the apartment before them. When they arrived, Stephen was deep in a philosophical discussion with the Venusian of the tragic nobility of human nature, while Kruj and Mimi were experimenting with bond. Their respective civilizations could not have been markedly alcoholic; Kruj had reached the stage of sweeping and impassioned gestures, while Mimi beamed at him and giggled occasionally.

All three had discarded the standardized robes of the Stasis and resumed, in this friendly privacy, the clothes in which they had arrived—Kruj a curiously simplified and perverted version of the ruffled court costume of the Elizabethan era he had hoped to reach, Mimi the startling armor of an unfamiliar metal which was her uniform as Amazon warrior, and Nikobat a bronze-colored loincloth against which his green skin assumed an odd beauty.

Brent introduced Martha's guests to their hostess and went on, "Now for a staff meeting of G.H.Q. We've got to lay our plans carefully, because we're up against some stiff opposition. There's one other traveler who—"

"One moment," said Martha's voice. "Shouldn't you introduce me, too?"

"I beg your pardon, madam. I just finished that task of courtesy. And now—"

"I be sorry," her voice went on. "You still do not understand. You introduced Martha, yes—but not me."

Stephen turned to the travelers. "I must apologize for my sister. She haves goed through queer experiences of late. She traveled with our friend John and meeted herself in her earlier life. I fear that shock has temporarily—and temporarily—unbalanced her."

"Can none of you understand so simple thing?" the woman's voice pleaded. "I be simply using Martha's voice as instrument of communication. I can just as easily—"

"Steeth!" Kruj exclaimed. "'Tis eke as easy and mayhap more pleasant to borrow this traveler's voice for mine explanations."

"Or," Mimi added, "I cou taw li thih, but I do' like ih vey muh."

Stephen's eyes popped. "You mean that you be traveler without body?"

"Got it in one," Brent heard his own voice saying. "I can wander about any way I damned please. I picked the woman first because her mind was easy to occupy, and I think I'll go on using her. Brent here's a little hard to keep under control."

Stephen nodded. "Then all good advice Martha haves beed giving us—"

"Bees mine, of course." The bodiless traveler was back in Martha now.

Brent gasped. "And now I see how you wangled the release of the travelers. You got us in by usurping the mind and speech of each of the minor officials we tackled, and then ousted the Head of State and Chief of Stappers to make them give their consent."

Martha nodded. "Exactly."

"This is going to be damned useful. And where do you come from, sir? Or is it madam?"

"I come from future so far distant that even our Venusian friend here cannot conceive of it. And distinction between *sir* and *madam* bees then meaningless."

The dapper Kruj glanced at the hulking Amazon beside him. "'Twere a pity," he murmured.

"And your intentions here, to go on with the State linguist's questionnaire?"

"My intentions? Listen, all of you. We cannot shape ends. Great patterns be shaped outside of us and beyond us. I beed historian in my time. I know patterns of mankind even down to minute details. And I know that Stephen here bees to lead people of this Age of Smugness out of their stupidity and back to humanity."

Stephen coughed embarrassedly. "I have no wish to lead. But for such cause man must do what he may."

"That bees ultimate end of this section of pattern. That bees fixed. All that we travelers can do bees to aid him as wisely as we can and to make the details of the pattern as pleasing as may be. And that we will do."

Stephen must have been so absorbed in this speech that his hearing was dulled. The door opened without warning, and Bokor entered.

"'Swounds!" Kruj cried out. "A Stapper!"

Stephen smiled. "Why fear Stappers? You be legally liberated."

"Stapper, hell!" Brent snorted. "Well, Bokor? You still want to declare yourself in with your racket?"

Bokor's deep eyes swept the room. He smiled faintly. "I merely wished to show you something, Brent. So that you know what you be up against. I have finded two young scientists dissatisfied with scholastic routine of research for Cosmos. Now they work under me and they have maked for me—this." He held a bare rod in his hand.

"So it's a rod. So what next?"

"But it bees different rod, Brent. It does not paralyze. It destroys." The point of the rod wavered and covered in turn each individual in the room. "I want you to see what I can accomplish."

"You suvvabih!" Mimi yelled and started to rise.

"State thanks you, madam, for making up my mind. I will demonstrate on you. Watch this, Brent, and realize what chance you have against me." He pointed the rod firmly at Mimi.

"Do something!" Martha screamed.

It all happened at once, but Brent seemed to see it in slow motion even as he moved. Mimi lunged forward furiously and recklessly. Kruj dived for her feet and brought her to the floor out of the line of fire. At the same time Brent threw himself forward just as Bokor moved, so that the rod now

pointed directly at Brent. He couldn't arrest his momentum. He was headed straight at Bokor's new instrument of death. And then the rod moved to Bokor's own head.

There was no noise, no flash. But Bokor's body was lying on the floor, and the head was nowhere.

"That beed hard," said Martha's voice. "I haved to stay in his mind long enough to actuate rod, but get out before death. Matter of fractions of seconds."

"Nice work, sir-madam," Brent grunted. He looked down at the corpse. "But that was only one of him."

Brent quoted in his journal: *Love, but a day, and the world has changed! A week, to be more exact, but the change is nonetheless sudden and impressive.*

Our nameless visitant from the future—they seem to need titles as little as sexes in that time—whom I have for convenience labeled Sirdam, has organized our plans about the central idea of interfering as little as possible—forcing the inhabitants of the Stasis to work out their own salvation. The travelers do not appear openly in this great change. We work through Stephen's associates.

There are some 40 of us (I guess I count as a traveler; I'm not too sure what the hell my status is by now), which means each of us can take on five or ten of Stephen's boys (and girls), picking the ones whose interests lie closest to his own special fields. That means a working force of Undergrounders running somewhere above 200 and under 500 . . . fluctuating constantly as people come under or escape from Stapper observation, as new recruits come in, or (as will damnably happen despite every precaution) as one of our solid old-timers gets his mind changed and decides Stasis bees perfect after all.

The best single example to show the results we obtain is the episode of Professor Harrington, whose special department of so-called learning is the preservation of the Nakamura Law of Spatial Acceleration, which had so conclusively proved to the founders of the Stasis the impossibility of interplanetary travel.

This fell obviously within Nikobat's field. A young scientist affiliated with the Underground—a nephew, I have since learned, of Alex's—expounded the Nakamura doctrine as he had learned and re-proved it. It took the Venusian less than five minutes to put his finger on the basic flaw in the statement—the absolute omission, in all calculations, of any con-

sideration of galactic drift. Once this correction was applied to the Nakamura formulas, they stood revealed as the pure nonsense which, indeed, Nikobat's very presence proved them.

It was not Nikobat but the young man who placed this evidence before Professor Harrington. The scene must have been classic. "I saw," the young man later told us—they are all trying desperately to unlearn Farthing-ized English—"his mouth fall open and gap spread across his face as wide as gap he suddenly finded in universe."

For the professor was not stupid. He was simply so conditioned from childhood to the acceptance of the Stasis of Cosmos that he had never questioned it. Besides, he had doubtless had friends whose minds were changed when they speculated too far.

Harrington's eyes lit up after the first shock. He grabbed pencil and paper and furiously checked through the revised equations again and again. He then called in a half dozen of his best students and set them to what was apparently a routine exercise—interpolating variations for galactic drift in the Nakamura formulas.

They ended as astonished as their instructor. The first one done stared incredulously at his results and gasped, "Nakamura beed wrong!"

That was typical. The sheep are ready to be roused, each in his individual way. Kruj has been training men to associate with the writers of the Stasis. The man's knowledge of literature of all periods; and especially of his beloved Elizabethan Age, is phenomenal and his memory something superhuman. And four writers out of five who hear his disciples discourse on the joys of creative language and quote from the Elizabethan dramatists and the King James Bible will never be content again to write Stasis propaganda for the sollies or the identically bound books of the State libraries.

I have myself been contributing a fair amount to the seduction of the world by teaching cooks. I was never in my own time acknowledged as better than a fair-to-middling non-professional, but here I might be Escoffier or Brillat-Savarin. We steal plants and animals from the scientific laboratories, and in our hands they become vegetables and meat; and many a man in the street, who doesn't give a damn if his science is false and his arts synthetic, has suddenly realized that he owes the State a grudge for feeding him on concentrates.

The focus of everything is Stephen. It's hard to analyze why. Each of us travelers has found among the Undergrounders someone far more able in his own special field, yet all of us, travelers and Undergrounders alike, unquestioningly acknowledge Stephen as our leader. It may be the sheer quiet kindness and goodness of his nature. It may be that he and Alex, in their organization of this undercover group of instinctive rebels, were the first openly to admit that the Stasis was inhuman and to do something about it. But from whatever cause, we all come to depend more and more on the calm reliability of Stephen.

Nikobat says—

Brent broke off as Kruj Krujil Krujilar staggered into the room. The little man was no longer dapper. His robes were tattered, and their iridescence was overlaid with the solid red of blood. He panted his first words in his own tongue, then recovered himself. "We must act apace, John. Where is Stephen?"

"At Underground quarters. But what's happened?"

"I was nearing the building where they do house us travelers when I beheld hundreds of people coming along the street. Some wore our robes, some wore Stappers'. And they all—" He shuddered. "They all had the same face—a brown hairless face with black eyes."

Brent was on his feet. "Bokor!" The man had multiplied himself into a regiment. One man who was hundreds—why not thousands? millions?—could indeed be a conqueror. "What happened?"

"They entered the building. I knew that I could do nothing there, and came to find you and Stephen and the bodiless one. But as I came along the street, lo! on every corner there was yet another of that face, and always urging the people to maintain the Stasis and destroy the travelers. I was recognized. By good hap those who set upon me had no rods, so I escaped with my life."

Brent thought quickly. "Martha is with Stephen, so Edam is probably there, too. Go to him at once and warn him. I'm going to the travelers' building and see what's happened. Meet you at the headquarters as soon as I can." Kruj hesitated. "Mimi—"

"I'll bring her with me if I can. Get going."

The streets were mad. Wild throngs jammed the moving

roadways. Somewhere in the distance mountainous flames leaped up and their furious glitter gleamed from the eyes of the mob. These were the ordinary citizens of Stasis, no longer cattle, or rather cattle stampeded.

A voice blared seemingly out of the heavens. Brent recognized the public address system used for vital State messages. "Revolt of travelers haves spreaded to amphitheater of Cosmos. Flames lighted by travelers now attack sacred spot. People of Cosmos: Destroy travelers!"

There was nothing to mark Brent superficially as a traveler. He pushed along with the job, shouting as rapidly as any other. He could make no headway. He was borne along on these foaming human waves.

Then in front of him he saw three Bokors pushing against the mob. If they spied him—His hands groped along the wall. Just as a Bokor looked his way, he found what he was seeking—one of the spying niches of the Stappers. He slipped into safety then peered out cautiously.

From the next door he saw a man emerge whom he knew by sight—a leading dramatist of the sollies, who had promised to be an eventual convert of Kruij's disciples. Three citizens of the mob halted him as he stepped forth.

"What bees your name?"

"Where be you going?"

The solly writer hesitated. "I be going to amphitheater. Speaker have sayed—"

"When do you come from?"

"Why, from now."

"What bees your name?"

"John—"

"Ha!" the first citizen yelled. "Stappers have telled us to find this John. Tear him to pieces; he bees traveler."

"No, truly. I be no traveler; I be writer of sollies."

One of the citizens chortled cruelly. "Tear him for his bad sollies!"

There was one long scream—

Fire breeds fire, literally as well as metaphorically. The dwelling of the travelers was ablaze when Brent reached it. A joyous mob cheered and gloated before it.

Brent started to push his way through, but a hand touched his arm and a familiar voice whispered, "Ach-tung! Ou vkho-dit."

He interpreted the warning and let the Venusian draw him aside. Nikobat rapidly explained.

"The Stappers came and subdued the whole crowd with paralyzing rods. They took them away—God knows what they'll do with them. There's no one in there now; the fire's just a gesture."

"But you— How did you—"

"My nerve centers don't react the same. I lay doggo and got away. Mimi escaped, too; her armor has deflecting power. I think she's gone to warn the Underground."

"Then come on."

"Don't stay too close to me," Nikobat warned. "They'll recognize me as a traveler; stay out of range of rods aimed at me. And here. I took these from a Stapper I strangled. This one is a paralyzing rod; the other's an annihilator."

The next half-hour was a nightmare—a montage of flames and blood and sweating bodies of hate. The Stasis of Stupidity was becoming a Stasis of Cruelty. Twice groups of citizens stopped Brent. They were unarmed; Bokor wisely kept weapons to himself, knowing that the fangs and claws of an enraged mob are enough. The first group Brent left paralyzed. The second time he confused his weapons. He had not meant to kill.

He did not confuse his weapons when he bagged a brace of Bokors. But what did the destruction of two matter? He fought his way on, finally catching up with Nikobat at their goal. As they met, the voice boomed once more from the air. "Important! New Chief of Stappers announced that officers of Chief of Stappers and Head of State be henceforth maked one. Under new control, travelers will be wiped out and Stasis preserved. Then on to South America for glory of Cosmos!"

Brent shuddered. "And we started out so beautifully on our renaissance!"

Nikobat shook his head. "But the bodiless traveler said that Stephen was to destroy the Stasis. This multiple villain cannot change what has happened."

"Can't he? We're taking no chances."

The headquarters of the Underground was inappositely in a loft. The situation helped. The trap entrance was unnoticeable from below and had gone unheeded by the mobs. Brent delivered the proper raps, and the trap slid open and dropped a ladder. Quickly they mounted.

The loft was a sick bay. A half-dozen wounded members of Stephen's group lay groaning on the floor. With them was Kruj. Somewhere the little man had evaded the direct line of an annihilator, but lost his hand. Blood was seeping out of his bandages, and Mimi, surprising feminine and un-Amazonic, held his unconscious head in her lap.

"You don't seem to need warning," Brent observed.

Stephen shook his head. "We be trapped here. Here we be safe for at littlest small while. If we go out—"

Brent handed him his rods. "You're the man we've got to save, Stephen. You know what Sirdam's said—it all depends on you. Use these to protect yourself, and we'll make a dash for it. If we can lose ourselves in the mob as ordinary citizens there's a chance of getting away with it. Or"—he turned to Martha-Sirdam—"have you any ideas?"

"Yes. But only as last resort."

Nikobat was peering out the window. "It's the last resort now," he said. "There's a good fifty of those identical Stappers outside, and they're headed here. They act as though they know what this is."

Brent was looking at Stephen, and he saw a strange thing. Stephen's face was expressionless, but somewhere behind his eyes Brent seemed to sense a struggle. Stephen's body trembled with an effort of will, and then his eyes were clear again. "No," he said distinctly. "You do not need to control me. I understand. You be right. I will do as you say." And he lifted the annihilator rod.

Brent started forward, but his muscles did not respond to his commands. Force his will though he might, he stood still. It was the bodiless traveler who held him motionless to watch Stephen place the rod to his temple.

"This bees goodest thing that I can do for mans," said Stephen simply. Then his headless corpse thumped on the floor.

Brent was released. He dashed forward, but vainly. There was nothing men could do for Stephen now. Brent let out a choking gasp of pain and sorrow.

Then the astonished cries of the Undergrounders recalled him from his friend's body. He looked about him. Where was Nikobat? Where were Kruj and Mimi?

A small inkling of the truth began to reach him. He hurried to the window and looked out.

There were no Bokors before the house. Only a few citizens staring dazedly at a wide space of emptiness.

At that moment the loud-speaker sounded. "Announce-

ment," a shocked voice trembled. "Chief of Stappers haves just disappeared." And in a moment it added, "Guards report all travelers have vanished."

The citizens before the house were rubbing their eyes like men coming out of a nightmare.

"But don't you see, madam— No? Well, let me try again." Brent was not finding it easy to explain her brother's heroic death to an untenanted Martha. "Remember what your inhabitant told us? The Stasis was overthrown by Stephen."

"But Stephen bees dead."

"Exactly. So listen: All these travelers came from a future wherein Stephen had overthrown the Stasis so that when Stephen destroyed himself, as Sirdam realized, he likewise destroyed that future. A world in which Stephen died unsuccessful is a world that cannot be entered by anyone from the other future. Their worlds vanished and they with them. It was the only way of abolishing the menace of the incredibly multiplied Bokor."

"Stephen bees dead. He cans not overthrow Stasis now."

"My dear madam—Hell, skip it. But the Stasis is drained nonetheless in this new world created by Stephen's death. I've been doing a little galping on my own. The people are convinced now that the many exemplars of Bokor were some kind of evil invader. They rebound easy, the hordes; they dread the memory of those men and they dread also the ideas of cruelty and conquest to which the Bokors had so nearly converted them.

"But one thing they can't rebound from is the doubts and the new awarenesses that we planted in their minds. And there's what's left of your movement to go on with. No, the Stasis is damned, even if they are going to erect yet another Barrier."

"Oh," Martha shuddered. "You willn't let them."

Brent grinned. "Madam, there's damned little letting I can do. They're going to, and that's that. Because, you see, all the travelers vanished."

"But why—"

Brent shrugged and gave up. "Join me in some bond?" It was clear enough. The point of time which the second Barrier blocked existed both in the past of the worlds of Nikobat and Sirdam, and in the past of this future they were now entering. But if this future road stretched clear ahead, then travelers—a different set from a different future, but travelers nonethe-

less—would have appeared at the roadblock. The vanishing Bokors and Nikobat and the rest would have been replaced by another set of stranded travelers.

But no one, in this alternate unknown to Sirdam in which Stephen died a failure, had come down the road of the future. There was a roadblock ahead. The Stasis would erect another Barrier . . . and God grant that some scientific successor to Alex would create again the means of disrupting it. And the travelers from this coming future—would they be Sirdams to counsel and guide man, or Bokors to corrupt and debase him?

Brent lifted his glass of bond. "To the moment after the next Barrier!" he said.

THE TWONKY

Astounding,

September

by ("Lewis Padgett") Henry Kuttner
(1914-1958) and C. L. Moore
(1911-)

The most famous man and wife writing team in the history of science fiction, Henry Kuttner and Catherine L. Moore produced a large body of outstanding work from their marriage in 1940 through the early 1950s. Although Kuttner had written a number of excellent stories before 1940 under his own name and a bewildering number of pseudonyms, his reputation was less than that of Moore's, who had become an established star in the 1930s with her "Northwest Smith" and "Jirel of Joiry" series. As many historians have pointed out, Kuttner's best solo work was of the highest standards, although after his marriage almost all of the stories published under either of their names or their pseudonyms (of which "Padgett" was the most famous and important) were joint efforts in the truest sense. Their most prolific period was the mid-to-late 1940s, and we will encounter them frequently in future volumes of this series.

*"The Twonky" was somewhat lost in the September, 1942 *Astounding* because that issue also contained Boucher's "Barrier" and del Rey's "Nerves," but it is an excellent and clever story about children, radio, and a most peculiar form of social control. It was later filmed (*The Twonky*, 1952), but this adaptation failed to capture the real spirit of the story.*

(I have, on a few occasions, collaborated and I have always found the process to be a difficult one. I find it very difficult to accept someone else's views in connection with

something I am doing; and I invariably fail to understand why someone else should ever question my own views which are so transparently correct. Yet Kuttner and Moore not only carried through a very successful collaboration, and so intimate a one apparently that it is impossible to tell exactly who wrote what, but managed to maintain a successful marriage at the same time. —Of course, someone is bound to ask how I can collaborate with Marty in this series of anthologies. The answer is easy: Marty is so good-natured, and so willing to do the scutwork—writing for permissions, keeping the books, handling the correspondence—that I would have to be an idiot not to be able to maintain a perfectly loving collaboration.—I. A.)

The turnover at Mideastern Radio was so great that Mickey Lloyd couldn't keep track of his men. It wasn't only the draft; employees kept quitting and going elsewhere, at a higher salary. So when the big-headed little man in overalls wandered vaguely out of a storeroom, Lloyd took one look at the brown dungaree suit—company provided—and said mildly, "The whistle blew half an hour ago. Hop to work."

"Work-k-k?" The man seemed to have trouble with the word.

Drunk? Lloyd, in his capacity as foreman, couldn't permit that. He flipped away his cigarette, walked forward, and sniffed. No, it wasn't liquor. He peered at the badge on the man's overalls.

"Two-oh-four, m-mm. Are you new here?"

"New. Huh?" The man rubbed a rising bump on his forehead. He was an odd-looking little chap, bald as a vacuum tube, with a pinched-pallid face and tiny eyes that held dazed wonder.

"Come on, Joe. Wake up!" Lloyd was beginning to sound impatient. "You work here, don't you?"

"Joe," said the man thoughtfully. "Work. Yes, I work. I make them." His words ran together oddly, as though he had a cleft palate.

With another glance at the badge, Lloyd gripped Joe's arm and ran him through the assembly room. "Here's your place. Hop to it. Know what to do?"

The other drew his scrawny body erect. "I am—expert," he remarked. "Make them better than Ponthwank."

"O.K.," Lloyd said. "Make 'em, then." And he went away.

The man called Joe hesitated, nursing the bruise on his

head. The overalls caught his attention, and he examined them wonderingly. Where—oh, yes. They had been hanging in the room from which he had first emerged. His own garments had, naturally, dissipated during the trip—what trip?

Amnesia, he thought. He had fallen from the . . . the something . . . when it slowed down and stopped. How odd this huge, machine-filled barn looked. It struck no chord of remembrance.

Amnesia, that was it. He was a worker. He made things. As for the unfamiliarity of his surroundings, that meant nothing. He was still dazed. The clouds would lift from his mind presently. They were beginning to do that already.

Work. Joe scuttled around the room, trying to goad his faulty memory. Men in overalls were doing things. Simple, obvious things. But how childish—how elemental! Perhaps this was a kindergarten.

After a while Joe went out into a stock room and examined some finished models of combination radio-phonographs. So that was it. Awkward and clumsy, but it wasn't his place to say so. No. His job was to make Twonkies.

Twonkies? The name jolted his memory again. Of course he knew how to make Twonkies. He'd made them all his life—had been specially trained for the job. Now they were using a different model of Twonky, but what the hell! Child's play for a clever workman.

Joe went back into the shop and found a vacant bench. He began to build a Twonky. Occasionally he slipped off and stole the material he needed. Once, when he couldn't locate any tungsten, he hastily built a small gadget and made it.

His bench was in a distant corner, badly lighted, though it seemed quite bright to Joe's eyes. Nobody noticed the console that was swiftly growing to completion there. Joe worked very, very fast. He ignored the noon whistle, and, at quitting time, his task was finished. It could, perhaps, stand another coat of paint—it lacked the Shimmertone of a standard Twonky. But none of the others had Shimmertone. Joe sighed, crawled under the bench, looked in vain for a relaxopad, and went to sleep on the floor.

A few hours later he woke up. The factory was empty. Odd! Maybe the working hours had changed. Maybe—Joe's mind felt funny. Sleep had cleared away the mists of amnesia, if such it had been, but he still felt dazed.

Muttering under his breath, he sent the Twonky into the stock room and compared it with the others. Superficially it

was identical with a console radio-phonograph combination of the latest model. Following the pattern of the others, Joe had camouflaged and disguised the various organs and reactors.

He went back into the shop. Then the last of the mists cleared from his mind. Joe's shoulders jerked convulsively.

"Great Snell!" he gasped. "So that was it! I ran into a temporal snag!"

With a startled glance around, he fled to the storeroom from which he had first emerged. The overalls he took off and returned to their hook. After that, Joe went over to a corner, felt around in the air, nodded with satisfaction and seated himself on nothing, three feet above the floor. Then Joe vanished.

"Time," said Kerry Westerfield, "is curved. Eventually it gets back to the same place where it started. That's duplication." He put his feet up on a conveniently outjutting rock of the chimney and stretched luxuriously. From the kitchen Martha made clinking noises with bottles and glasses.

"Yesterday at this time I had a Martini," Kerry said. "The time curve indicates that I should have another one now. Are you listening, angel?"

"I'm pouring," said the angel distantly.

"You get my point, then. Here's another. Time describes a spiral instead of a circle. If you call the first cycle *a*, the second one's a *plus 1*—see? Which means a double Martini tonight."

"I know where that would end," Martha remarked, coming into the spacious, oak-raftered living room. She was a small, dark-haired woman with a singularly pretty face and a figure to match. Her tiny gingham apron looked slightly absurd in combination with slacks and silk blouse. "And they don't make infinity-proof gin. Here's your Martini." She did things with the shaker and manipulated glasses.

"Stir slowly," Kerry cautioned. "Never shake. Ah—that's it." He accepted the drink and eyed it appreciatively. Black hair, sprinkled with gray, gleamed in the lamplight as he sipped the Martini. "Good. Very good."

Martha drank slowly and eyed her husband. A nice guy, Kerry Westerfield. He was forty-odd, pleasantly ugly, with a wide mouth and an occasional sardonic gleam in his gray eyes as he contemplated life. They had been married for twelve years, and liked it.

From outside, the late faint glow of sunset came through the windows, picking out the console cabinet that stood against the wall by the door. Kerry peered at it with appreciation.

"A pretty penny," he remarked. "Still—"

"What? Oh. The men had a tough time getting it up the stairs. Why don't you try it, Kerry?"

"Didn't you?"

"The old one was complicated enough," Martha said, in a baffled manner. "Gadgets. They confuse me. I was brought up on an Edison. You wound it up with a crank, and strange noises came out of a horn. That I could understand. But now—you push a button, and extraordinary things happen. Electric eyes, tone selections, records that get played on both sides, to the accompaniment of weird groanings and clickings from inside the console—probably you understand those things. I don't even want to. Whenever I play a Crosby record in a superdooper like that, Bing seems embarrassed."

Kerry ate his olive. "I'm going to play some Sibelius." He nodded toward a table. "There's a new Crosby record for you. The latest."

Martha wriggled happily. "Can I, maybe, huh?"

"Uh-huh."

"But you'll have to show me how."

"Simple enough," said Kerry, beaming at the console. "Those babies are pretty good, you know. They do everything but think."

"I wish it'd wash dishes," Martha remarked. She set down her glass, got up and vanished into the kitchen.

Kerry snapped on a lamp nearby and went over to examine the new radio, Mideastern's latest model, with all the new improvements. It had been expensive—but what the hell? He could afford it. And the old one had been pretty well shot.

It was not, he saw, plugged in. Nor were there any wires in evidence—not even a ground. Something new, perhaps. Built-in antenna and ground. Kerry crouched down, looked for a socket and plugged the cord into it.

That done, he opened the doors and eyed the dials with every appearance of satisfaction. A beam of bluish light shot out and hit him in the eyes. From the depths of the console a faint, thoughtful clicking proceeded. Abruptly it stopped. Kerry blinked, fiddled with dials and switches, and bit at a fingernail.

The radio said, in a distant voice, "Psychology pattern checked and recorded."

"Eh?" Kerry twirled a dial. "Wonder what that was? Amateur station—no, they're off the air. Hm-m-m." He shrugged and went over to a chair beside the shelves of albums. His gaze ran swiftly over the titles and composers' names. Where was the "Swan of Tuonela"? There it was, next to "Finlandia." Kerry took down the album and opened it in his lap. With his free hand he extracted a cigarette from his pocket, put it between his lips, and fumbled for the matches on the table beside him. The first match he lit went out.

He tossed it into the fireplace and was about to reach for another when a faint noise caught his attention. The radio was walking across the room toward him. A whiplike tendril flicked out from somewhere, picked up a match, scratched it beneath the table top—as Kerry had done—and held the flame to the man's cigarette.

Automatic reflexes took over. Kerry sucked in his breath, and exploded in smoky, racking coughs. He bent double, gasping and momentarily blind.

When he could see again, the radio was back in its accustomed place.

Kerry caught his lower lip between his teeth. "Martha," he called.

"Soup's on," her voice said.

Kerry didn't answer. He stood up, went over to the radio and looked at it hesitantly. The electric cord had been pulled out of its socket. Kerry gingerly replaced it.

He crouched to examine the console's legs. They looked like finely finished wood. His exploratory hand told him nothing. Wood—hard and brittle.

How in hell—

"Dinner!" Martha called.

Kerry threw his cigarette into the fireplace and slowly walked out of the room. His wife, setting a gravy boat in place, stared at him.

"How many Martinis did you have?"

"Just one," Kerry said in a vague way. "I must have dozed off for a minute. Yeah. I must have."

"Well, fall to," Martha commanded. "This is the last chance you'll have to make a pig of yourself on my dumplings, for a week, anyway."

Kerry absently felt for his wallet, took out an envelope,

and tossed it toward his wife. "Here's your ticket, angel. Don't lose it."

"Oh? I rate a compartment!" Martha thrust the pasteboard back into its envelope and gurgled happily. "You're a pal. Sure you can get along without me?"

"Huh? Hm-m-m—I think so." Kerry salted his avocado. He shook himself and seemed to come out of a slight daze. "Sure, I'll be all right. You trot off to Denver and help Carol have her baby. It's all in the family."

"We-ell, my only sister—" Martha grinned. "You know how she and Bill are. Quite nuts. They'll need a steadying hand just now."

There was no reply. Kerry was brooding over a forkful of avocado. He muttered something about the Venerable Bede.

"What about him?"

"Lecture tomorrow. Every term we bog down on the Bede, for some strange reason. Ah, well."

"Got your lecture ready?"

Kerry nodded. "Sure." For eight years he had taught at the University, and he certainly should know the schedule by this time!

Later, over coffee and cigarettes, Martha glanced at her wrist watch. "Nearly train time. I'd better finish packing. The dishes—"

"I'll do 'em." Kerry wandered after his wife into the bedroom and made motions of futile helpfulness. After a while, he carried the bags down to the car. Martha joined him, and they headed for the depot.

The train was on time. Half an hour after it had pulled out, Kerry drove the car back into the garage, let himself into the house and yawned mightily. He was tired. Well, the dishes, and then beer and a book in bed.

With a puzzled look at the radio, he entered the kitchen and did things with water and soap chips. The hall phone rang. Kerry wiped his hands on a dish towel and answered it.

It was Mike Fitzgerald, who taught psychology at the University.

"Hiya, Fitz."

"Hiya. Martha gone?"

"Yeah. I just drove her to the train."

"Feel like talking, then? I've got some pretty good Scotch. Why not run over and gab a while?"

"Like to," Kerry said, yawning again, "but I'm dead. Tomorrow's a big day. Rain check?"

"Sure. I just finished correcting papers, and felt the need of sharpening my mind. What's the matter?"

"Nothing. Wait a minute." Kerry put down the phone and looked over his shoulder, scowling. Noises were coming from the kitchen. What the hell!

He went along the hall and stopped in the doorway, motionless and staring. The radio was washing the dishes.

After a while he returned to the phone. Fitzgerald said, "Something?"

"My new radio," Kerry told him carefully. "It's washing the dishes."

Fitz didn't answer for a moment. His laugh was a bit hesitant. "Oh?"

"I'll call you back," Kerry said, and hung up. He stood motionless for a while, chewing his lip. Then he walked back to the kitchen and paused to watch.

The radio's back was toward him. Several limber tentacles were manipulating the dishes, expertly sousing them in hot, soapy water, scrubbing them with the little mop, dipping them into the rinse water and then stacking them neatly in the metal rack. Those whip-lashes were the only sign of unusual activity. The legs were apparently solid.

"Hey!" Kerry said.

There was no response.

He sidled around till he could examine the radio more closely. The tentacles emerged from a slot under one of the dials. The electric cord was dangling. No juice, then. But what—

Kerry stepped back and fumbled out a cigarette. Instantly the radio turned, took a match from its container on the stove, and walked forward. Kerry blinked, studying the legs. They couldn't be wood. They were bending as the . . . the thing moved, elastic as rubber. The radio had a peculiar sidling motion unlike anything else on earth.

It lit Kerry's cigarette and went back to the sink, where it resumed the dishwashing.

Kerry phoned Fitzgerald again. "I wasn't kidding. I'm having hallucinations or something. That damned radio just lit a cigarette for me."

"Wait a minute—" Fitzgerald's voice sounded undecided. "This is a gag—eh?"

"No. And I don't think it's an hallucination, either. It's up your alley. Can you run over and test my knee-jerks?"

"All right," Fitz said. "Give me ten minutes. Have a drink ready."

He hung up, and Kerry, laying the phone back into its cradle, turned to see the radio walking out of the kitchen toward the living room. Its square, boxlike contour was subtly horrifying, like some bizarre sort of hobgoblin. Kerry shivered.

He followed the radio, to find it in its former place, motionless and impassive. He opened the doors, examining the turntable, the phonograph arm, and the other buttons and gadgets. There was nothing apparently unusual. Again he touched the legs. They were not wood, after all. Some plastic, which seemed quite hard. Or—maybe they were wood, after all. It was difficult to make certain, without damaging the finish. Kerry felt a natural reluctance to use a knife on his new console.

He tried the radio, getting local stations without trouble. The tone was good—unusually good, he thought. The phonograph—

He picked up Halvorsen's "Entrance of the Boyards" at random and slipped it into place, closing the lid. No sound emerged. Investigation proved that the needle was moving rhythmically along the groove, but without audible result. Well?

Kerry removed the record as the doorbell rang. It was Fitzgerald, a gangling, saturnine man with a leathery, wrinkled face and a tousled mop of dull-gray hair. He extended a large, bony hand.

"Where's my drink?"

"'Lo Fitz. Come in the kitchen. I'll mix. Highball?"

"Highball."

"O. K." Kerry led the way. "Don't drink it just yet, though. I want to show you my new combination."

"The one that washes dishes?" Fitzgerald asked. "What else does it do?"

Kerry gave the other a glass. "It won't play records."

"Oh, well. A minor matter, if it'll do the housework. Let's take a look at it." Fitzgerald went into the living room, selected "Afternoon of a Faun," and approached the radio. "It isn't plugged in."

"That doesn't matter a bit," Kerry said wildly.

"Batteries?" Fitzgerald slipped the record in place and ad-

justed the switches. "Now we'll see." He beamed triumphantly at Kerry. "Well? It's playing now."

It was.

Kerry said. "Try that Halvorsen piece. Here." He handed the disk to Fitzgerald, who pushed the reject switch and watched the lever arm lift.

But this time the phonograph refused to play. It didn't like "Entrance of the Boyards."

"That's funny," Fitzgerald grunted. "Probably the trouble's with the record. Let's try another."

There was no trouble with "Daphnis and Chloe." But the radio silently rejected the composer's "Bolero."

Kerry sat down and pointed to a nearby chair. "That doesn't prove anything. Come over here and watch. Don't drink anything yet. You, uh, you feel perfectly normal?"

"Sure. Well?"

Kerry took out a cigarette. The console walked across the room, picking up a match book on the way, and politely held the flame. Then it went back to its place against the wall.

Fitzgerald didn't say anything. After a while he took a cigarette from his pocket and waited. Nothing happened.

"So?" Kerry asked.

"A robot. That's the only possible answer. Where in the name of Petrarch did you get it?"

"You don't seem much surprised."

"I am, though. But I've seen robots before— Westinghouse tried it, you know. Only this—" Fitzgerald tapped his teeth with a nail. "Who made it?"

"How the devil should I know?" Kerry demanded. "The radio people, I suppose."

Fitzgerald narrowed his eyes. "Wait a minute. I don't quite understand—"

"There's nothing to understand. I bought this combination a few days ago. Turned in the old one. It was delivered this afternoon, and—" Kerry explained what had happened.

"You mean you didn't know it was a robot?"

"Exactly. I bought it as a radio. And . . . and . . . the damn thing seems almost alive to me."

"Nope." Fitzgerald shook his head, rose, and inspected the console carefully. "It's a new kind of robot. At least—" he hesitated. "What else is there to think? I suggest you get in touch with the Mideastern people tomorrow and check up."

"Let's open the cabinet and look inside," Kerry suggested.

Fitzgerald was willing, but the experiment proved impossible. The presumably wooden panels weren't screwed into place, and there was no apparent way of opening the console. Kerry found a screwdriver and applied it, gingerly at first, then with a sort of repressed fury. He could neither pry free a panel nor even scratch the dark, smooth finish of the cabinet.

"Damn!" he said finally. "Well, your guess is as good as mine. It's a robot. Only I didn't know they could make 'em like this. And why in a radio?"

"Don't ask me," Fitzgerald shrugged. "Check up tomorrow. That's the first step. Naturally I'm pretty baffled. If a new sort of specialized robot has been invented, why put it in a console? And what makes those legs move? There aren't any casters."

"I've been wondering about that, too."

"When it moves, the legs look—rubbery. But they're not. They're hard as . . . as hardwood. Or plastic."

"I'm afraid of the thing," Kerry said.

"Want to stay at my place tonight?"

"N-no. No. I guess not. The—robot—can't hurt me."

"I don't think it wants to. It's been helping you, hasn't it?"

"Yeah," Kerry said, and went off to mix another drink.

The rest of the conversation was inconclusive. Fitzgerald, several hours later, went home rather worried. He wasn't as casual as he had pretended, for the sake of Kerry's nerves. The impingement of something so entirely unexpected on normal life was subtly frightening. And yet, as he had said, the robot didn't seem menacing—

Kerry went to bed, with a new detective mystery. The radio followed him into the bedroom and gently took the book out of his hand. Kerry instinctively snatched for it.

"Hey!" he said. "What the devil—"

The radio went back into the living room. Kerry followed, in time to see the book replaced on the shelf. After a bit Kerry retreated, locking his door, and slept uneasily till dawn.

In dressing gown and slippers, he stumbled out to stare at the console. It was back in its former place, looking as though it had never moved. Kerry, rather white around the gills, made breakfast.

He was allowed only one cup of coffee. The radio appeared, reprovingly took the second cup from his hand, and emptied it into the sink.

That was quite enough for Kerry Westerfield. He found his hat and topcoat and almost ran out of the house. He had a horrid feeling that the radio might follow him, but it didn't, luckily for his sanity. He was beginning to be worried.

During the morning he found time to telephone Mideastern. The salesman knew nothing. It was a standard model combination—the latest. If it wasn't giving satisfaction, of course, he'd be glad to—

"It's O.K.," Kerry said. "But who made the thing? That's what I want to find out."

"One moment, sir." There was a delay. "It came from Mr. Lloyd's department. One of our foremen."

"Let me speak to him, please."

But Lloyd wasn't very helpful. After much thought, he remembered that the combination had been placed in the stock room without a serial number. It had been added later.

"But who *made* it?"

"I just don't know. I can find out for you, I guess. Suppose I ring you back."

"Don't forget," Kerry said, and went back to his class. The lecture on the Venerable Bede wasn't too successful.

At lunch he saw Fitzgerald, who seemed relieved when Kerry came over to his table. "Find out any more about your pet robot?" the psychology professor demanded.

No one else was within hearing. With a sigh Kerry sat down and lit a cigarette. "Not a thing. It's a pleasure to be able to do this myself." He drew smoke into his lungs. "I phoned the company."

"And?"

"They don't know anything. Except that it didn't have a serial number."

"That may be significant," Fitzgerald said.

Kerry told the other about the incident of the book and the coffee, and Fitzgerald squinted thoughtfully at his milk. "I've given you some psych tests. Too much stimulation isn't good for you."

"A detective yarn!"

"Carrying it a bit to extremes, I'll admit. But I can understand *why* the robot acted that way—though I dunno how it managed it." He hesitated. "Without intelligence, that is."

"Intelligence?" Kerry licked his lips. "I'm not so sure that it's just a machine. And I'm not crazy."

"No, you're not. But you say the robot was in the front room. How could it tell you were reading?"

"Short of X-ray vision and superfast scanning and assimilative powers, I can't imagine. Perhaps it doesn't want me to read anything."

"You've said something," Fitzgerald grunted. "Know much about theoretical—machines—of that type?"

"Robots?"

"Purely theoretical. Your brain's a colloid, you know. Compact, complicated—but slow. Suppose you work out a gadget with a multimillion radioatom unit embedded in an insulating material—the result is a brain, Kerry. A brain with a tremendous number of units interacting at light-velocity speeds. A radio tube adjusts current flow when it's operating at forty million separate signals a second. And—theoretically—a radioatomic brain of the type I've mentioned could include perception, recognition, consideration, reaction and adjustment in a hundred-thousandth of a second."

"Theory."

"I've thought so. But I'd like to find out where your radio came from."

A page came over. "Telephone call for Mr. Westerfield."

Kerry excused himself and left. When he returned, there was a puzzled frown knitting his dark brows. Fitzgerald looked at him inquiringly.

"Guy named Lloyd, at the Mideastern plant. I was talking to him about the radio."

"Any luck?"

Kerry shook his head. "No. Well, not much. He didn't know who had built the thing."

"But it was built in the plant?"

"Yes. About two weeks ago—but there's no record of who worked on it. Lloyd seemed to think that was very, very funny. If a radio's built in the plant, they *know* who put it together."

"So?"

"So nothing, I asked him how to open the cabinet, and he said it was easy. Just unscrew the panel in back."

"There aren't any screws," Fitzgerald said.

"I know."

They looked at one another.

Fitzgerald said, "I'd give fifty bucks to find out whether that robot was really built only two weeks ago."

"Why?"

"Because a radioatomic brain would need training. Even in such matters as the lighting of a cigarette."

"It saw me light one."

"And followed the example. The dish-washing—hm-m-m. Induction, I suppose. If that gadget has been trained, it's a robot. If it hasn't—" Fitzgerald stopped.

Kerry blinked. "Yes?"

"I don't know what the devil it is. It bears the same relation to a robot that we bear to *eohippus*. One think I do know, Kerry; it's very probable that no scientist today has the knowledge it would take to make a . . . a thing like that."

"You're arguing in circles," Kerry said. "It *was* made."

"Uh-huh. But how—when—and by whom? That's what's got me worried."

"Well, I've a class in five minutes. Why not come over tonight?"

"Can't. I'm lecturing in the Hall. I'll phone you after, though."

With a nod Kerry went out, trying to dismiss the matter from his mind. He succeeded pretty well. But dining alone in a restaurant that night, he began to feel a general unwillingness to go home. A hobgoblin was waiting for him.

"Brandy," he told the waiter. "Make it double."

Two hours later a taxi let Kerry out at his door. He was remarkably drunk. Things swam before his eyes. He walked unsteadily toward the porch, mounted the steps with exaggerated care, and let himself into the house.

He switched on a lamp.

The radio came forward to meet him. Tentacles, thin, but strong as metal, coiled gently around his body, holding him motionless. A pang of violent fear struck through Kerry. He struggled desperately and tried to yell, but his throat was dry.

From the radio panel a beam of yellow light shot out, blinding the man. It swung down, aimed at his chest. Abruptly a queer taste was perceptible under Kerry's tongue.

After a minute or so, the ray clicked out, the tentacles flashed back out of sight, and the console returned to its corner. Kerry staggered weakly to a chair and relaxed, gulping.

He was sober. Which was quite impossible. Fourteen brandies infiltrate a definite amount of alcohol into the system. One can't wave a magic wand and instantly reach a state of sobriety. Yet that was exactly what had happened.

The robot—was trying to be helpful. Only Kerry would have preferred to remain drunk.

He got up gingerly and sidled past the radio to the bookshelf. One eye on the combination, he took down the detective novel he had tried to read on the preceding night. As he had expected, the radio took it from his hand and replaced it on the shelf. Kerry, remembering Fitzgerald's words, glanced at his watch. Reaction time, four seconds.

He took down a Chaucer and waited, but the radio didn't stir. However, when Kerry found a history volume, it was gently removed from his fingers. Reaction time, six seconds.

Kerry located a history twice as thick.

Reaction time, ten seconds.

Uh-huh. So the robot did read the books. That meant X-ray vision and superswift reactions. Jumping Jehoshaphat!

Kerry tested more books, wondering what the criterion was. *Alice in Wonderland* was snatched from his hand; Mil-lay's poems were not. He made a list, with two columns, for future reference.

The robot, then, was not merely a servant. It was a censor. But what was the standard of comparison?

After a while he remembered his lecture tomorrow, and thumbed through his notes. Several points needed verification. Rather hesitantly he located the necessary reference book—and the robot took it away from him.

"Wait a minute," Kerry said. "I *need* that." He tried to pull the volume out of the tentacle's grasp, without success. The console paid no attention. It calmly replaced the book on its shelf.

Kerry stood biting his lip. This was a bit too much. The damned robot was a monitor. He sidled toward the book, snatched it, and was out in the hall before the radio could move.

The thing was coming after him. He could hear the soft padding of its . . . its feet. Kerry scurried into the bedroom and locked the door. He waited, heart thumping, as the knob was tried gently.

A wire-thin cilia crept through the crack of the door and fumbled with the key. Kerry suddenly jumped forward and shoved the auxiliary bolt into position. But that didn't help, either. The robot's precision tools—the specialized antenna—slid it back; and then the console opened the door, walked into the room, and came toward Kerry.

He felt a touch of panic. With a little gasp he threw the

book at the thing, and it caught it deftly. Apparently that was all that was wanted, for the radio turned and went out, rocking awkwardly on its rubbery legs, carrying the forbidden volume. Kerry cursed quietly.

The phone rang. It was Fitzgerald.

"Well? How'd you make out?"

"Have you got a copy of Cassen's *Social Literature of the Ages*?"

"I don't think so—no. Why?"

"I'll get it in the University library tomorrow, then." Kerry explained what had happened. Fitzgerald whistled softly.

"Interfering, is it? Hm-m-m. I wonder—"

"I'm afraid of the thing."

"I don't think it means you any harm. You say it sobered you up?"

"Yeah. With a light ray. That isn't very logical."

"It might be. The vibrationary equivalent of thiamin chloride."

"Light?"

"There's vitamin content in sunlight, you know. That isn't the important point. It's censoring your reading—and apparently it reads the books, with superfast reactions. That gadget, whatever it is, isn't merely a robot."

"You're telling me," Kerry said grimly. "It's a Hitler."

Fitzgerald didn't laugh. Rather soberly, he suggested, "Suppose you spend the night at my place?"

"No," Kerry said, his voice stubborn. "No so-and-so radio's going to chase me out of my house. I'll take an ax to the thing first."

"We-ell—you know what you're doing, I suppose. Phone me if . . . if anything happens."

"O. K.," Kerry said, and hung up. He went into the living room and eyed the radio coldly. What the devil was it—and what was it trying to do? Certainly it wasn't merely a robot. Equally certainly, it wasn't alive, in the sense that a colloid brain is alive.

Lips thinned, he went over and fiddled with the dials and switches. A swing band's throbbing erratic tempo came from the console. He tried the short-wave band—nothing unusual there. So?

So nothing. There was no answer.

After a while he went to bed.

At luncheon the next day he brought Cassen's *Social Literature* to show Fitzgerald.

"What about it?"

"Look here," Kerry flipped the pages and indicated a passage. "Does this mean anything to you?"

Fitzgerald read it. "Yeah. The point seems to be that individualism is necessary for the production of literature. Right?"

Kerry looked at him. "I don't know."

Eh?"

"My mind goes funny."

Fitzgerald rumbled his gray hair, narrowing his eyes and watching the other man intently. "Come again. I don't quite—"

With angry patience, Kerry said, "This morning I went into the library and looked at this reference. I read it all right. But it didn't mean anything to me. Just words. Know how it is when you're fagged out and have been reading a lot? You'll run into a sentence with a lot of subjunctive clauses, and it doesn't percolate. Well, it was like that."

"Read it now," Fitzgerald said quietly, thrusting the book across the table.

Kerry obeyed, looking up with a wry smile. "No good."

"Read it aloud. I'll go over it with you, step by step."

But that didn't help. Kerry seemed utterly unable to assimilate the sense of the passage.

"Semantic block, maybe," Fitzgerald said, scratching his ear. "Is this the first time it's happened?"

"Yes . . . no. I don't know."

"Got any classes this afternoon? Good. Let's run over to your place."

Kerry thrust away his plate. "All right. I'm not hungry. Whenever you're ready—"

Half an hour later they were looking at the radio. It seemed quite harmless. Fitzgerald wasted some time trying to pry a panel off, but finally gave it up as a bad job. He found pencil and paper, seated himself opposite Kerry, and began to ask questions.

At one point he paused. "You didn't mention that before."

"Forgot it, I guess."

Fitzgerald tapped his teeth with the pencil. "Hm-m-m. The first time the radio acted up—"

"It hit me in the eye with a blue light—"

"Not that. I mean—what it said."

Kerry blinked. "What *it* said?" He hesitated. "‘Psychology pattern checked and noted,’ or something like that. I thought I’d tuned in on some station and got part of a quiz program or something. You mean—"

"Were the words easy to understand? Good English?"

"No, now that I remember it," Kerry scowled. "They were slurred quite a lot. Vowels stressed."

"Uh-huh. Well, let’s get on." They tried a word-association test.

Finally Fitzgerald leaned back, frowning. "I want to check this stuff with the last tests I gave you a few months ago. It looks funny to me—damned funny. I’d feel a lot better if I knew exactly what memory was. We’ve done considerable work on mnemonics—artificial memory. Still, it may not be that at all."

"Eh?"

"That—machine. Either it’s got an artificial memory, has been highly trained or else it’s adjusted to a different *milieu* and culture. It has affected you—quite a lot."

Kerry licked dry lips. "How?"

"Implanted blocks in your mind. I haven’t correlated them yet. When I do, we may be able to figure out some sort of answer. No, that thing isn’t a robot. It’s a lot more than that."

Kerry took out a cigarette; the console walked across the room and lit it for him. The two men watched with a faint shrinking horror.

"You’d better stay with me tonight," Fitzgerald suggested.

"No," Kerry said. He shivered.

The next day Fitzgerald looked for Kerry at lunch, but the younger man did not appear. He telephoned the house, and Martha answered the call.

"Hello! When did you get back?"

"Hello, Fitz. About an hour ago. My sister went ahead and had her baby without me—so I came back." She stopped, and Fitzgerald was alarmed at her tone.

"Where’s Kerry?"

"He’s here. Can you come over, Fitz? I’m worried."

"What’s the matter with him?"

"I . . . I don’t know. Come right away."

"O. K.," Fitzgerald said, and hung up, biting his lips. He was worried. When, a short while later, he rang the Wester-

field bell, he discovered that his nerves were badly out of control. But sight of Martha reassured him.

He followed her into the living room. Fitzgerald's glance went at once to the console, which was unchanged; and then to Kerry, seated motionless by a window. Kerry's face had a blank, dazed look. His pupils were dilated, and he seemed to recognize Fitzgerald only slowly.

"Hello, Fitz," he said.

"How do you feel?"

Martha broke in. "Fitz, what's wrong? Is he sick? Shall I call the doctor?"

Fitzgerald sat down. "Have you noticed anything funny about that radio?"

"No. Why?"

"Then listen." He told the whole story, watching incredulity struggle with reluctant belief on Martha's face. Presently she said, "I can't quite—"

"If Kerry takes out a cigarette, the thing will light it for him. Want to see how it works?"

"No-no. Yes. I suppose so." Martha's eyes were wide.

Fitzgerald gave Kerry a cigarette. The expected happened.

Martha didn't say a word. When the console had returned to its place, she shivered and went over to Kerry. He looked at her vaguely.

"He needs a doctor, Fitz."

"Yes." Fitzgerald didn't mention that a doctor might be quite useless.

"What is that thing?"

"It's more than a robot. And it's been readjusting Kerry. I told you what's happened. When I checked Kerry's psychology patterns, I found that they'd altered. He's lost most of his initiative."

"Nobody on earth could have made that—"

Fitzgerald scowled. "I thought of that. It seems to be the product of a well-developed culture, quite different from ours. Martian, perhaps. It's such a specialized thing that it naturally fits into a complicated culture. But I do not understand why it looks exactly like a Mideastern console radio."

Martha touched Kerry's hand. "Camouflage?"

"But why? You were one of my best pupils in psych, Martha. Look at this logically. Imagine a civilization where a gadget like that has its place. Use inductive reasoning."

"I'm trying to. I can't think very well. Fitz, I'm worried about Kerry."

"I'm all right," Kerry said.

Fitzgerald put his fingertips together. "It isn't a radio so much as a monitor. In this other civilization, perhaps every man has one, or maybe only a few—the ones who need it. It keeps them in line."

"By destroying initiative?"

Fitzgerald made a helpless gesture. "I don't know! It worked that way in Kerry's case. In others—I don't know."

Martha stood up. "I don't think we should talk any more. Kerry needs a doctor. After that we can decide upon that." She pointed to the console.

Fitzgerald said, "It'd be rather a shame to wreck it, but—" His look was significant.

The console moved. It came out from its corner with a sideling, rocking gait and walked toward Fitzgerald. As he sprang up, the whiplike tentacles flashed out and seized him. A pale ray shone into the man's eyes.

Almost instantly it vanished; the tentacles withdrew, and the radio returned to its place. Fitzgerald stood motionless. Martha was on her feet, one hand at her mouth.

"Fitz!" Her voice shook.

He hesitated. "Yes? What's the matter?"

"Are you hurt? What did it do to you?"

Fitzgerald frowned a little. "Eh? Hurt? I don't—"

"The radio. What did it do?"

He looked toward the console. "Something wrong with it? Afraid I'm not much of a repair man, Martha."

"Fitz." She came forward and gripped his arm. "Listen to me." Quick words spilled from her mouth. The radio. Kerry. Their discussion—

Fitzgerald looked at her blankly, as though he didn't quite understand. "I guess I'm stupid today. I can't quite understand what you're talking about."

"The radio—you know! You said it changed Kerry—" Martha paused, staring at the man.

Fitzgerald was definitely puzzled. Martha was acting strangely. Queer! He'd always considered her a pretty level-headed girl. But now she was talking nonsense. At least, he couldn't figure out the meaning of her words—there was no sense to them.

And why was she talking about the radio? Wasn't it satisfactory? Kerry had said it was a good buy, with a fine tone

and the latest gadgets in it. Fitzgerald wondered, for a fleeting second, if Martha had gone crazy.

In any case, he was late for his class. He said so. Martha didn't try to stop him when he went out. She was pale as chalk.

Kerry took out a cigarette. The radio walked over and held a match.

"Kerry!"

"Yes, Martha?" His voice was dead.

She stared at the . . . the radio. Mars? Another world—another civilization? What was it? What did it want? *What was it trying to do?*

Martha let herself out of the house and went to the garage. When she returned, a small hatchet was gripped tightly in her hand.

Kerry watched. He saw Martha walk over to the radio and lift the hatchet. Then a beam of light shot out, and Martha vanished. A little dust floated up in the afternoon sunlight.

"Destruction of life-form threatening attack," the radio said, slurring the words together.

Kerry's brain turned over. He felt sick, dazed and horribly empty. Martha—

His mind—churned. Instinct and emotion fought with something that smothered them. Abruptly the dams crumbled, and the blocks were gone, the barriers down. Kerry cried out hoarsely, inarticulately, and sprang to his feet.

"Martha!" he yelled.

She was gone. Kerry looked around. Where—

What had happened? He couldn't remember.

He sat down in the chair again, rubbing his forehead. His free hand brought up a cigarette, an automatic reaction that brought instant response. The radio walked forward and held a lighted match ready.

Kerry made a choking, sick sound and flung himself out of the chair. He remembered now. He picked up the hatchet and sprang toward the console, teeth bared in a mirthless rictus.

Again the light beam flashed out.

Kerry vanished. The hatchet thudded onto the carpet.

The radio walked back to its place and stood motionless once more. A faint clicking proceeded from its radioatomic brain.

"Subject basically unsuitable," it said, after a moment.

"Elimination has been necessary." *Click!* "Preparation for next subject completed."

Click.

"We'll take it," the boy said.

"You won't be making a mistake," smiled the rental agent. "It's quiet, isolated, and the price is quite reasonable."

"Not so very," the girl put in. "But it *is* just what we've been looking for."

The agent shrugged. "Of course an unfurnished place would run less. But—"

"We haven't been married long enough to get any furniture," the boy grinned. He put an arm around his wife. "Like it, hon?"

"Hm-m-m. Who lived here before?"

The agent scratched his cheek. "Let's see. Some people named Westerfield, I think. It was given to me for listing just about a week ago. Nice place. If I didn't own my own house, I'd jump at it myself."

"Nice radio," the boy said. "Late model, isn't it?" He went over to examine the console.

"Come along," the girl urged. "Let's look at the kitchen again."

"O. K., hon."

They went out of the room. From the hall came the sound of the agent's smooth voice, growing fainter. Warm afternoon sunlight slanted through the windows.

For a moment there was silence. Then—

Click!

QRM-INTERPLANETARY

Astounding,

October

by George O. Smith (1911-)

George O. Smith is a trained electronics engineer who successfully translated his technical expertise to prose fiction with this interesting tale, which was his first published science fiction story. It proved to be so popular that it resulted in an important series, the Venus Equilateral stories (first collected 1947). Among his other ten or so novels, the most important is The Fourth R (1959), one of the most neglected and best superman treatments of the last several decades.

Although "QRM-Interplanetary" was not the first story of space communications techniques, it was the most noteworthy before Arthur C. Clarke turned his attention to the subject a few years after it appeared in the pages of Astounding.

(We all have our peculiar characteristics—I shudder when I think of my own—and George's is that he is an inveterate interrupter. This is true not only in informal conversation but even in the case where he is in the audience listening to a formal speech. It does tend to break the line of thought and weaken the thrust of the argument when you're the speaker and can therefore be harrowing. I remember once, when I was speaking at a convention and it was Cyril Kornbluth who was interrupting. I stopped him cold when I said, "Cyril, you're the poor man's George O. Smith." I don't think he ever forgave me.—I.A.)

Korvus, the Magnificent, Nilamo of Yoralen, picked up the telephone in his palace and said: "I want to talk to Wilneda. He is at the International Hotel in Detroit, Michigan."

"I'm sorry, sir," came the voice of the operator. "Talking is not possible, due to the fifteen-minute transmission lag between here and Terra. However, teletype messages are welcome."

Her voice originated fifteen hundred miles north of Yoralen, but it sounded as though she might be in the next room. Korvus thought for a moment and then said, "Take this message: 'Wilneda: Add to order for mining machinery one type 56-XXD flier to replace washed-out model. And remember, alcohol and energy will not mix!' Sign that Korvus."

"Yes, Mr. Korvus."

"Not *mister*!" yelled the monarch. "I am Korvus the Magnificent! I am Nilamo of Yoralen!"

"Yes, your magnificence," said the operator humbly. It was more than possible that she was stifling a laugh, which knowledge made the little man of Venus squirm in wrath. But there was nothing he could do about it, so he wisely said nothing.

To give Korvus credit, he was not a pompous little man. He was large—for a Venusian—which made him small according to the standards set up by the Terrestrians. He, as Nilamo of Yoralen, had extended the once-small kingdom outward to include most of the Palanortis Country, which extended from 23.0 degrees north latitude to 61.7 degrees, and almost across the whole, single continent that was the dry land of Venus.

So Korvus' message to Terra zoomed across the fifteen hundred rocky miles of Palanortis to Northern Landing. It passed high across the thousand-foot-high trees and over the mountain ranges. It swept over open patches of water, and across intervening cities and towns. It went with the speed of light and in a tight beam from Yoralen to Northern Landing, straight as a die and with person-to-person clarity. The operator in the city that lay across the North Pole of Venus clicked on a teletype, reading back the message as it was printed.

Korvus told her: "That is correct."

"The message will be in the hands of your representative Wilneda within the hour."

The punched tape from Operator No. 7's machine slid along the line until it entered a coupling machine.

The coupling machine worked furiously. It accepted the tapes from seventy operators as fast as they could set them. It selected the messages as they entered the machine, placing a

mechanical preference upon whichever message happened to be ahead of the others on the moving tapes. The master tape moved continuously at eleven thousand words per minute, taking teletype messages from everywhere in the Northern Hemisphere of Venus to Terra and Mars. It was a busy machine; even at eleven thousand words per minute it often got hours behind.

The synchronous-keyed signal from the coupling machine left the operating room and went to the transmission room. It was amplified and sent out of the city to a small, squat building at the outskirts of Northern Landing. It was hurled at the sky out of a reflector antenna by a thousand-kilowatt transmitter.

The wave seared against the Venusian Heaviside Layer. It fought and it struggled. And, as is the case with strife, it lost heavily in the encounter. The beam was resisted fiercely. Infiltrations of ionization tore at the radio beam, stripping and trying to beat it down.

But man triumphed over nature. The megawatt of energy that came in a tight beam from the building at Northern Landing emerged from the Heaviside Layer as a weak, piffling signal. It wavered and it crackled. It wanted desperately to lie down and sleep. Its directional qualities were impaired, and it wobbled badly. It arrived at the relay station tired and worn.

One million watts of ultra-high frequency energy at the start, it was measurable in microvolts when it reached a space station only five hundred miles above the city of Northern Landing.

The signal, as weak and as wobbly as it was, was taken in by eager receptors. It was amplified. It was dehashed, destacked and deloused. And once again, one hundred decibels stronger and infinitely cleaner, the signal was hurled out on a tight beam from a gigantic parabolic reflector.

Across sixty-seven million miles of space went the signal. Across the orbit of Venus it went in a vast chord, and arrived at the Venus Equilateral Station with less trouble than the original transmission through the Heaviside Layer. The signal was amplified and demodulated. It went into a decoupler machine where the messages were sorted mechanically and sent, each to the proper channel, into other coupler machines. Beams from Venus Equilateral were directed at Mars and at Terra.

The Terra beam ended at Luna. Here it again was placed

in the two-compartment beam and from Luna it punched down at Terra's Layer, emerging into the atmosphere of Terra as weak and as tired as it had been when it had come out of the Venusian Heaviside Layer. It entered a station in the Bahamas, was stripped of the interference, and put upon the land beams. It entered decoupling machines that sorted the messages as to destination. These various beams spread out across the face of Terra, the one carrying Korvus' message finally coming into a station at Ten Mile Road and Woodward. From this station, at the outskirts of Detroit, it went upon land wires downtown to the International Hotel.

The teletype machine in the office of the hotel began to click rapidly. The message to Wilneda was arriving.

And fifty-five minutes after the operator told Korvus that less than an hour would ensue, Wilneda was saying, humorously, "So, Korvus was drunk again last night—"

Completion of Korvus' message to Wilneda completes also one phase of the tale at hand. It is not important. There were a hundred and fifty other messages that might have been accompanied in the same manner, each as interesting to the person who likes the explanation of the interplanetary communication service. But this is not a technical journal. A more complete explanation of the various phases that a message goes through in leaving a city on Venus to go to Terra may be found in the *Communications Technical Review*, Volume XXVII, number 8, pages 411 to 716. Readers more interested in the technical aspects are referred to the article.

It so happens that Korvus' message was picked out of a hundred-odd messages because of one thing only. At the time that Korvus' message was in transit through the decoupler machines at the Venus Equilateral Relay Station, something of a material nature was entering the air lock of the station.

It was an unexpected visit.

Don Channing looked up at the indicator panel in his office and frowned in puzzlement. He punched a buzzer and spoke into the communicator on his desk.

"Find out who that is, will you, Arden?"

"He isn't expected," came back the voice of Arden Westland.

"I know that. But I've been expecting someone ever since John Peters retired last week. You know why."

"You hope to get his job," said the girl in an amused voice.

"I hope you do. So that someone else will sit around all day trying to make you retire so that he can have your job!"

"Now look, Arden, I've never tried to make Peters retire."

"No, but when the word came that he was thinking of it, you began to think about taking over. Don't worry, I don't blame you." There was quite a protracted silence, and then her voice returned. "The visitor is a gentleman by the name of Francis Burbank. He came out in a flitter with a chauffeur and all."

"Big shot, hey?"

"Take it easy. He's coming up the office now."

"I gather that he desires audience with me?" asked Don.

"I think that he's here to lay down the law! You'll have to get out of Peter's office, if his appearance is any guide."

Some more silence followed. The communicator was turned off at the other end, which made Channing fume. He would have preferred to hear the interchange of words between his secretary and the newcomer. Then, instead of having the man announced, the door opened and the stranger entered. He came to the point immediately.

"You're Don Channing? Acting Director of Venus Equilateral?"

"I am."

"Then I have some news for you, Dr. Channing. I have been appointed Director by the Interplanetary Communications Commission. You are to resume your position as Electronics Engineer."

"Oh?" said Channing. "I sort of believed that I would be offered *this* position."

"There was a discussion of that procedure. However, the commission decided that a man of more commercial training would better fill the position. The Communications Division has been operating at too small a profit. They felt that a man of commercial experience could cut expenses and so on to good effect. You understand their reasoning, of course," said Burbank.

"Not exactly."

"Well, it is like this. They know that a scientist is not usually the man to consider the cost of experimentation. Scientists build thousand-ton cyclotrons to convert a penny's worth of lead into one and one-tenth cents' worth of lead and gold. And they use three hundred dollars' worth of power and a million-dollar machine to do it with.

"They feel that a man with training like that will not know

the real meaning of the phrase 'cutting expenses.' A new broom sweeps clean, Dr. Channing. There must be many places where a man of commercial experience can cut expenses. I, as Director, shall do so."

"I wish you luck," said Channing.

"Then, there is no hard feeling?"

"I can't say that. It is probably not your fault. I cannot feel against you, but I do feel sort of let down at the decision of the commission. I have had experience in this job."

"The commission may appoint you to follow me. If your work shows a grasp of commercial operations, I shall so recommend."

"Thanks," said Channing dryly. "May I buy you a drink?"

"I never drink. And I do not believe in it. If it were mine to say, I'd prohibit liquor from the premises. Venus Equilateral would be better off without it."

Don Channing snapped the communicator. "Miss Westland, will you come in?"

She entered, puzzlement on her face.

"This is Mr. Burbank. His position places him in control of this office. You will, in the future, report to him directly. The report on the operations, engineering projects and so on that I was to send in to the commission this morning will, therefore, be placed in Mr. Burbank's hands as soon as possible."

"Yes, Dr. Channing." Her eyes held a twinkle, but there was concern and sympathy in them, too. "Shall I get them immediately?"

"They are ready?"

"I was about to put them on the tape when you called."

"Then give them to Mr. Burbank." Channing turned to Burbank. "Miss Westland will hand you the reports I mentioned. They are complete and precise. A perusal of them will put you in grasp of the situation here at Venus Equilateral better than will an all-afternoon conference. I'll have Miss Westland haul my junk out of here. You may consider this as your office, it having been used by Dr. Peters. And, in the meantime, I've got to check up on some experiments on the ninth level." Channing paused. "You'll excuse me?"

"Yes, if Miss Westland knows where to find you."

"She will. I'll inform her of my whereabouts."

"I may want to consult you after I read the reports."

"That will be all right. The autocall can find me anywhere on Venus Equilateral, if I'm at the place Miss Westland calls."

Don Channing stopped at Arden's desk. "I'm booted," he told her.

"Leaving Venus Equilateral?" she asked with concern.

"No, blonde and beautiful, I'm just shunted back to my own office."

"Can't I go with you?" pleaded the girl.

"Nope. You are to stay here and be a nice, good-looking Mata Hari. This bird seems to think that he can run Venus Equilateral like a bus or a factory. I know the type, and the first thing he'll do is to run the place into a snarl. Keep me informed of anything complicated, will you?"

"Sure. And where are you going now?"

"I'm going down to get Walt Franks. We're going to inspect the transparency of a new type of glass."

"I didn't know that optical investigations come under your jurisdiction."

"This investigation will consist of a visit to the ninth level."

"Can't you take me along?"

"Not today," he grinned. "Your new boss does not believe in the evils of looking through the bottom of a glass. We must behave with decorum. We must forget fun. We are now operating under a man who will commercialize electronics to a fine art."

"Don't get stewed. He may want to know where the electrons are kept."

"I'm not going to drink that much. Walt and I need a discussion," he said. "And in the meantime, haul my spinach out of the office, will you, and take it back to the electronics office? I'll be needing it back there."

"O.K., Don," she said. "I'll see you later."

Channing left to go to the ninth level. He stopped long enough to collect Walt Franks.

Over a tall glass of beer, Channing told Franks of Burbank's visit. And why.

Only one thing stuck in Franks' mind. "Did you say that he might close Joe's?" asked Franks.

"He said that if it were in his power to do so, he would."

"Heaven forbid. Where will we go to be alone?"

"Alone?" snorted Channing. The barroom was half filled with people, being the only drinking establishment for sixty-odd million miles.

"Well, you know what I mean."

"I could smuggle in a few cases of beer," suggested Don.

"Couldn't we smuggle him out?"

"That would be desirable. But I think he is here to stay. Darn it all, why do they have to appoint some confounded political pal to a job like this? I'm telling you, Walt, he must weigh two hundred if he weighs a pound. He holds his stomach on his lap when he sits down."

Walt looked up and down Channing's slender figure. "Well, he won't be holding Westland on his lap if it is filled with stomach."

"I never hold Westland on my lap——"

"No?"

"—during working hours!" Channing finished. He grinned at Franks and ordered another beer. "And how is the Office of Beam Control going to make out under the new regime?"

"I'll answer that after I see how the new regime treats the Office of Beam Control," answered Franks. "I doubt that he can do much to bugger things up in my office. There aren't many cheaper ways to direct a beam, you know."

"Yeah. You're safe."

"But what I can't understand is why they didn't continue you in that job. You've been handling the business ever since last December, when Peters got sick. You've been doing all right."

"Doing all right just means that I've been carrying over Peters' methods and ideas. What the commission wants, apparently, is something new. Ergo, the new broom."

"Personally, I like that one about the old shoes being more comfortable," said Franks. "If you say the right word, Don, I'll slip him a dose of high voltage. That should fix him."

"I think that the better way would be to *work* for the bird. Then when he goes, I'll have his recommendation."

"Phooey," snorted Franks. "They'll just appoint another political pal. They've tried it before and they'll try it again. I wonder what precinct he carries."

The telephone rang in the bar, and the bartender, after answering, motioned to Walt Franks. "You're wanted in your office," said the bartender. "And besides," he told Channing, "if I'm going to get lunch for three thousand people, you'd better trot along, too. It's nearly eleven o'clock, you know, and the first batch of two hundred will be coming in."

Joe was quite inaccurate as to the figures. The complement of Venus Equilateral was just shy of twenty-seven hundred. They worked in three eight-hour shifts, about nine hundred to a shift. They had their breakfast, lunch and dinner hours

staggered so that at no time were there more than about two hundred people in the big lunchroom. The bar, it may be mentioned, was in a smaller room at one end of the much larger cafeteria.

The Venus Equilateral Relay Station was a modern miracle of engineering if you liked to believe the books. Actually, Venus Equilateral was an asteroid that had been shoved into its orbit about the sun, forming a practical demonstration of the equilateral triangle solution of the Three Moving Bodies. It was a long cylinder, about three miles in length by about a mile in diameter.

In 1946, the United States Army Signal Corps succeeded in sending forth and receiving in return a radar signal from the moon. This was an academic triumph; at that time such a feat had no practical value. It's value came later when the skies were opened up for travel; when men crossed the void of space to colonize the nearer planets, Mars and Venus.

They found, then, that communications back and forth depended upon the initial experiment in 1946.

But there were barriers, even in deep space. The penetration of the Heaviside Layer was no great problem. That had been done. But they found that Sol, our sun, was often in the path of the communications beam because the planets all make their way around Sol at different rates of speed.

All too frequently Mars is on the opposite side of the sun from Terra, or Sol might lie between Venus and Mars. Astronomically, this situation where two planets lie on opposite sides of the sun is called Major Opposition, which is an appropriate name even though those who named it were not thinking in terms of communications.

The concept of Sol being between two planets and interfering with communication does not mean a true physical alignment. The sun is a tremendous generator of radiothermal energy, so that communication begins to fail when the other planet is 15 to 20 degrees from the sun. Thus, from 30 to 40 degrees of opposition passage, Venus Equilateral is a necessary relay station.

To circumvent this natural barrier to communications, mankind made use of one of the classic solutions of the problem of the Three Moving Bodies, in which it is stated that three celestial objects at the corners of an equilateral triangle will so remain, rotating about their common center of gravity. This equilateral position between the sun and any planet is called the "Trojan" position because it has been known

for some time that a group of asteroids precedes and follows Jupiter around in its orbit. The "Trojan" comes from the fact that these asteroids bear the well-known names of the heroes of the famous Trojan War.

To communicate around the sun, then, it is only necessary to establish a relay station in the Trojan position of the desired planet. This will be either ahead or behind the planet in its orbit; and the planet, the sun, and the station will form an equilateral triangle.

So was born the Venus Equilateral Relay Station.

Little remained of the original asteroid. At the present time, the original rock had been discarded to make room for the ever-growing personnel and material that were needed to operate the relay station. What had been an asteroid with machinery was now a huge pile of machinery with people. The insides, formerly of spongy rock, were now neatly cubed off into offices, rooms, hallways, and so on, divided by sheets of steel. The outer surface, once rugged and forbidding, was now all shiny steel. The small asteroid, a tiny thing, was gone, the station having overflowed the asteroid soon after men found that uninterrupted communication was possible between the worlds.

Now the man-made asteroid carried twenty-seven hundred people. There were stores, offices, places of recreation, churches, marriages, deaths and everything but taxes. Judging by its population, it was a small town.

Venus Equilateral rotated about its axis. On the inner surface of its double-walled shell were the homes of the people—not cottages, but apartmental cubicles, one, two, three, six rooms. Centrifugal force made a little more than one Earth G of artificial gravity. Above this shell of apartments, the offices began. Offices, recreation centers, and so on. Up in the central position, where the gravity was nil or near-nil, the automatic machinery was placed: the servogyroscopes and their beam finders, the storerooms, the air plant, the hydroponic farms, and all other things that needed little or no gravity for well-being.

This was the Venus Equilateral Relay Station, 60 degrees ahead of the planet Venus, on Venus' orbit. Often closer to Terra than Venus, the relay station offered a perfect place to relay messages through whenever Mars or Terra was on the other side of the sun. It was seldom idle, for it was seldom that Mars and Venus were in such a position that direct communications between all the three planets was possible.

This was the center of Interplanetary Communications. This was the main office. It was the heart of the solar system's communication line, and as such, it was well manned. Orders for everything emanated from Venus Equilateral. It was a delicate proposition, Venus Equilateral was, and hence the present-on-all-occasions official capacities and office staff.

This was the organization that Don Channing hoped to direct. A closed corporation with one purpose in mind: interplanetary communication!

Channing wondered if the summons for Walt Franks was an official one. Returning to the electronics office, Don punched the communicator and asked, "Is Walt in there?"

Arden's voice came back, "No, but Burbank is in Franks' office. Wanna listen?"

"Eavesdropper! Using the communicator?"

"Sure."

"Better shut it off," Don warned. "Burbank isn't foolish, you know, and there are pilot lights and warning flags on those things to tell if someone has the key open. I wouldn't want to see you fired for listening in."

"All right, but it was getting interesting."

"If I'm betting on the right horse," said Channing, "this will be interesting for all before it is finished."

Seven days went by in monotonous procession. Seven days in a world of constant climate. One week, marked only by the changing of work shifts and the clocks that marked off the eight-hour periods. Seven days unmarred by rain or cold or heat. Seven days of uninterrupted sunshine that flickered in and out of the sealed viewports with eye-searing brilliance, coming and going as the station rotated.

But in the front offices, things were not serene. Not that monotony ever set in seriously in the engineering department, but that sacred sanctum of all-things-that-didn't-behave-as-they-should found that even their usual turmoil was worse. There was nothing that a person could set his fingers on directly. It was more of a quiet, undercover nature. On Monday, Francis Burbank sent around a communiqué removing the option of free messages for the personnel. On Tuesday, he remanded the years-long custom of permitting the supply ships to carry, free, packages from friends at home. On Wednesday, Burbank decided that there should be a curfew on the one and only beer emporium. "Curfew" was a revision made after he

found that complete curtailment of all alcoholic beverages might easily lead to a more moral problem; there being little enough to do with one's spare time. On Thursday, he set up a stiff-necked staff of censors for the moving picture house. On Friday, he put a tax on cigarettes and candy. On Saturday, he installed time clocks in all the laboratories and professional offices, where previous to his coming men had come for work a half-hour late and worked an hour overtime at night.

On Sunday—

Don Channing stormed into the Director's office with a scowl on his face.

"Look," he said, "for years we have felt that any man, woman or child who was willing to come out here was worth all the freedom and consideration that we could give them. What about this damned tax on cigarettes? And candy? And who told you to stop our folks from telling their folks that they are still in good health? And why stop them from sending packages of candy, cake, mementoes, clothing, soap, mosquito dope, liquor, or anything else? And did you ever think that a curfew is something that can be applied only when time is one and the same for all? On Venus Equilateral, Mr. Burbank, six o'clock in the evening is two hours after dinner for one group, two hours after going to work for the second group, and mid-sleep for the third. Then this matter of cutting all love scenes, drinking, female vampires, banditry, bedroom items, murders and sweater girls out of the movies? We are a selected group and well prepared to take care of our morality. Any man or woman going offside would be heaved out quick. Why, after years of personal freedom, do we find ourselves under the authority of a veritable dictatorship?"

Francis Burbank was not touched. "I'll trouble you to keep to your own laboratory," he told Channing. "Perhaps your own laxity in matters of this sort is the reason why the commission preferred someone better prepared. You speak of many things. There will be more to come. I'll answer some of your questions. Why should we permit our profits to be eaten up by people sending messages, cost-free, to their acquaintances all over the minor planets? Why should valuable space for valuable supplies be taken up with personal favors between friends? And if the personnel wants to smoke and drink, let them pay for the privilege! It will help to pay for the high price of shipping the useless items out from the nearest planet—as well as saving of previous storage space!"

"But you're breeding ill will among the employees," Channing objected.

"Any who prefer to do so may leave!" snapped Burbank.

"You may find it difficult to hire people to spend their lives in a place that offers no sight of a sky or breath of fresh air. The people here may go home to their own planets to find that smell of fresh, spring air is more desirable than a climate that never varies from the personal optimum. I wonder, occasionally, if it might not be possible to instigate some sort of cold snap for a rainy season just for the purpose of bringing to the members of Venus Equilateral some of the surprises that are to be found in Chicago or New York. Hell, even Canalopsis has an occasional rainstorm!"

"Return to your laboratory," said Burbank coldly. "And let me run the station. Why should we spend useful money to pamper people? I don't care if Canalopsis does have an occasional storm, we are not on Mars, we are in Venus Equilateral. You tend to your end of the business and I'll do as I deem fitting for the station!"

Channing mentally threw up his hands and literally stalked out of the office. Here was a close-knit organization being shot full of holes by a screwball. He stamped down to the ninth level and beat upon the closed door of Joe's. The door remained closed.

Channing beat with his knuckles until they bled. Finally a door popped open down the hallway fifty yards and a man looked out. His head popped in again, and within thirty seconds the door to Joe's opened and admitted Channing.

Joe clapped the door shut behind Channing quickly.

"What in hell are you operating, Joe—a speakeasy?"

"The next time you want in," Joe informed him, "knock on 902 twice, 914 once and then here four times. We'll let you in. And now, don't say anything too loud." Joe put a finger to his lips and winked broadly. "Even the walls listen," he said in a stage whisper.

He led Channing into the room and put on the light. There was a flurry of people who tried to hide their glasses under the table. "Never mind," called Joe. "It's only Dr. Channing."

The room relaxed.

"I want something stiff," Channing told Joe. "I've just gone three rounds with His Nibs and come out cold."

Some people within earshot asked about it. Channing explained what had transpired. The people seemed satisfied that Channing had done his best for them. The room relaxed into routine.

The signal knock came on the door and was opened to admit Walt Franks and Arden Westland. Franks looked as though he had been given a stiff workout in a cement mixer.

"Scotch," said Arden. "And a glass of brew for the lady."

"What happened to him?"

"He's been trying to keep to Burbank's latest suggestions."

"You've been working too hard," Channing chided him gently. "This is the wrong time to mention it, I suppose, but did that beam slippage have anything to do with your condition—or was it vice versa?"

"You know that I haven't anything to do with the beam controls personally," said Franks. He straightened up and faced Channing defiantly.

"Don't get mad. What was it?"

"Mastermind, up there, called me in to see if there were some manner or means of tightening the beam. I told him, sure, we could hold the beam to practically nothing. He asked me why we didn't hold the beam to a parallel and save the dispersed power. He claimed that we could reduce power by two to one if more of it came into the station instead of being smeared all over the firmament. I, foolishly, agreed with him. He's right. You could. But only if everything is immobilized. I've been trying to work out some means of controlling the beam magnetically so that it would compensate for the normal variations due to magnetic influences. So far I've failed."

"It can't be done. I know, because I worked on the problem for three years with some of the best brains in the system. To date, it is impossible."

A click attracted their attention. It was the pneumatic tube. A cylinder dropped out of the tube, and Joe opened it and handed the enclosed paper to Franks.

He read:

WALT:

I'M SENDING THIS TO YOU AT JOE'S BECAUSE I KNOW THAT IS WHERE YOU ARE AND I THINK YOU SHOULD GET THIS REAL QUICK.

JEANNE S.

Walt smiled wearily and said, "A good secretary is a thing of beauty. A thing of beauty is admired and is a joy forever. Jeanne is both. She is a jewel."

"Yeah, we know. What does the letter say?"

"It is another communiqué from our doting boss. He is removing from my control the odd three hundred men I've got working on Beam Control. He is to assume the responsibility for them himself. I'm practically out of a job."

"Make that two Scotches," Channing told Joe.

"Make it three," chimed in Arden. "I've got to work for him, too!"

"Is that so bad?" asked Channing. "All you've got to do is to listen carefully and do as you're told. We have to answer to the bird, too."

"Yeah," said Arden, "but you fellows don't have to listen to a dopey guy ask foolish questions all day. It's driving me silly."

"What I'd like to know," murmured Franks, "is what is the idea of pulling me off the job? Nuts, I've been on the Beam Control for years. I've got the finest crew of men anywhere. They can actually foresee a shift and compensate for it, I think. I picked 'em myself and I've been proud of my outfit. Now," he said brokenly, "I've got no outfit. In fact, I have darned little crew left at all. Only my dozen lab members. I'll have to go back to swinging a meter myself before this is over."

It was quite a comedown. From the master of over three hundred highly-paid, highly prized, intelligent technicians, Walt Franks was now the superintendent of one dozen laboratory technicians. It was a definite cut in his status.

Channing finished his drink and, seeing that Franks' attention was elsewhere, he told Arden: "Thanks for taking care of him, but don't use all your sympathy on him. I feel that I'm going to need your shoulder to cry on before long."

"Any time you want a soft shoulder," said Arden generously, "let me know. I'll come a-running."

Channing went out. He roamed nervously all the rest of the day. He visited the bar several times, but the general air of the place depressed him. From a place of recreation, laughter and pleasantries, Joe's place had changed to a room for reminiscences and remorse, a place to drown one's troubles—or poison them—or to preserve them in alcohol.

He went to see the local moving picture, a piece advertised as being one of the best mystery thrillers since Hitchcock. He found that all of the interesting parts were cut out and that the only thing that remained was a rather disjointed portrayal of a detective finding meaningless clues and ultimately the criminal. There was a suggestion at the end that the detective and the criminal had fought it out, but whether it was with

pistols, field pieces, knives, cream puffs or words was left to the imagination. It was also to be assumed that he and the heroine, who went into a partial blackout every time she sat down, finally got acquainted enough to hold hands after the picture.

Channing stormed out of the theater after seeing it and finding that the only cartoon had been barred because it showed an innocuous cow without benefit of shorts.

He troubled Joe for a bottle of the best and took to his apartment in disappointment. By eight o'clock in the evening Don Channing was asleep with all his clothing on. The bed rolled and refused to stay on an even keel, but Channing found a necktie and tied himself securely in the bed and died off in a beautiful, boiled cloud.

He woke to the tune of a beautiful hangover, gulped seven glasses of water, staggered to the shower. Fifteen lavish minutes of iced needles and some coffee brought him part way back to his own, cheerful self. He headed down the hall toward the elevator.

He found a note in his office directing him to appear at a conference in Burbank's office. Groaning in anguish, Channing went to the Director's office expecting the worst.

It was bad. In fact, it was enough to drive everyone in the conference to drink. Burbank asked opinions on everything, and then tore the opinions apart with little regard to their validity. He expressed his own opinion many times, which was a disgusted sense of the personnel's inability to do anything of real value.

"Certainly," he stormed, "I know you are operating. But have there been any new developments coming out of your laboratory, Mr. Channing?"

Someone was about to tell Burbank that Channing had a doctor's degree, but Don shook his head.

"We've been working on a lot of small items," said Channing. "I cannot say whether there has been any one big thing that we could point to. As we make developments, we put them into service. Added together, they make quite an honest effort."

"What, for instance?" Burbank stormed.

"The last one was the coupler machine improvement that permitted better than ten thousand words per minute."

"Up to that time the best wordage was something like eight thousand words," said Burbank. "I think that you have been resting too long on your laurels. Unless you can bring me

something big enough to advertise, I shall have to take measure. Now *you*, Mr. Warren," continued Burbank. "You are the man who is supposed to be superintendent of maintenance. May I ask why the outer hull is not painted?"

"Because it would be a waste of paint," said Warren. "Figure out the acreage of a surface of a cylinder three miles long and a mile in diameter. It is almost eleven square miles! Eleven square miles to paint from scaffolding hung from the outside itself."

"Use bos'n's chairs," snapped Burbank.

"A bos'n's chair would be worthless," Warren informed Burbank. "You must remember that to anyone trying to operate on the outer hull, the outer hull is a ceiling and directly overhead. Another thing," said Warren, "you paint the hull and you'll run this station by yourself. Why d'ya think we have it shiny?"

"If we paint the hull," persisted Burbank, "it will be more presentable than that nondescript steel color."

"That steel color is as shiny as we could make it," growled Warren. "We want to get rid of as much radiated heat as we can. You slap a coat of any kind of paint on that hull and you'll have plenty of heat in here."

"Ah, that sounds interesting. We'll save heating costs—"

"Don't be an idiot," snapped Warren. "Heating costs, my grandmother's eye. Look, Burbank, did you ever hear of the Uranium Pile? Part of our income comes from refining uranium and plutonium and the preparation of radioisotopes. And— Good Lord, I'm not going to try to explain fission-reacting materials to you; get that first old copy of the Smyth Report and get caught up-to-date."

"The fact remains," continued Warren, cooling somewhat after displaying Burbank's ignorance, "that we have more power than we know what to do with. We're operating on a safe margin by radiating just a little more than we generate. We make up the rest by the old methods of artificial heating."

"But there have been a lot of times when it became necessary to dissipate a lot of energy for diverse reasons and then we've had to shut off the heating. What would happen if we couldn't cool off the damned coffee can? We'd roast to death the first time we got a new employee with a body temperature a degree above normal."

"You're being openly rebellious," Burbank warned him.

"So I am. And if you persist in your attempt to make this place presentable, you'll find me and my gang outright mutinous! Good day, sir!"

He stormed out of the office and slammed the door.

"Take a note, Miss Westland. 'Interplanetary Communications Commission, Terra. Gentlemen: Michael Warren, superintendent of maintenance at Venus Equilateral, has proven to be unresponsive to certain suggestions as to the appearance and/or operation of Venus Equilateral. It is my request that he be replaced immediately. Signed, Francis Burbank, Director.'" He paused to see what effect that message had upon the faces of the men around the table. "Send that by special delivery!"

Johnny Billings opened his mouth to say something, but shut it with a snap. Westland looked up at Burbank, but she said nothing. She gave Channing a sly smile, and Channing smiled back. There were grins about the table, too, for everyone recognized the boner. Burbank had just sent a letter from the interworld-communications relay station by special delivery mail. It would not get to Terra for better than two weeks; a use of the station's facilities would have the message in the hands of the commission within the hour.

"That will be all, gentlemen," Burbank smiled smugly. "Our next conference will be next Monday morning!"

"Mr. Channing," chortled the pleasant voice of Arden Westland, "now that the trifling influence of the boss versus secretary taboo is off, will you have the pleasure of buying me a drink?"

"Can you repeat that word for word and explain it?" grinned Don.

"A man isn't supposed to make eyes at his secretary. A gal ain't supposed to seduce her boss. Now that you are no longer Acting Director and I no longer your stenog, how about some sociability?"

"I never thought that I'd be propositioned by a typewriter jockey," said Channing, "but I'll do it. What time is it? Do we do it openly, or must we sneak over to the apartment and snaffle a snort on the sly?"

"We snaffle. That is, if you trust me in your apartment."

"I'm scared to death," Channing informed her. "But if I should fail to defend my honor, we must remember that it is no dishonor to try and fail."

"That sounds like a nice alibi," said Arden with a smile. "Or a come-on. I don't know which. Or, Mr. Channing, am I being told that my advances might not be welcome?"

"We shall see," Channing said. "We'll have to make a careful study of the matter. I cannot make any statements with-

out first making a thorough examination under all sorts of conditions. Here we are. You will precede me through the door, please."

"Why?" asked Arden.

"So that you cannot back out at the last possible moment. Once I get inside, I'll think about keeping you there!"

"As long as you have some illegal fluid, I'll stay." She tried to leer at Don but failed because she had had all too little experience in leering. "Bring it on!"

"Here's to the good old days," Don toasted as the drinks were raised.

"Nope. Here's to the future," proposed Arden. "Those good old days—all they were was old. If you were back in them, you'd still have to have the pleasure of meeting Burbank."

"Grrrr," growled Channing. "That name is never mentioned in this household."

"You haven't a pix of the old bird turned to the wall, have you?" asked Arden.

"I tossed it out."

"We'll drink to that." They drained glasses. "And we'll have another."

"I need another," said Channing. "Can you imagine that buzzard asking me to invent something big in seven days?"

"Sure. By the same reasoning that he uses to send a letter from Venus Equilateral instead of just slipping it on the Terra beam. Faulty."

"Phoney."

The door opened abruptly and Walt Franks entered. "D'ja hear the latest?" he asked breathlessly.

"No," said Channing.

He was reaching for another glass automatically. He poured, and Walt watched the amber fluid creep up the glass, led by a sheet of white foam.

"Then look!"

Walt handed Channing an official envelope. It was a regular notice to the effect that there had been eleven failures of service through Venus Equilateral.

"Eleven! What makes?"

"Mastermind."

"What's he done?"

"Remember the removal of my jurisdiction over the beam control operators? Well, in the last ten days, Burbank has installed some new features to cut expenses. I think that he hopes to lay off a couple of hundred men."

"What's he doing, do you know?"

"He's shortening the dispersion. He intends to cut the power by slamming more of the widespread beam into the receptor. The tighter beam makes aiming more difficult, you know, because at seventy million miles, every time little Joey of Mars swings his toy horseshoe magnet on the end of his string, the beam wobbles. And at seventy million miles, how much wobbling does it take to send a narrow beam clear off the target?"

"The normal dispersion of the beam from Venus is over a thousand miles wide. It gyrates and wobbles through most of that arc. That is why we picked that particular dispersion. If we could have pointed the thing like an arrow, we'd have kept the dispersion down."

"Right. And he's tightened the beam to less than a hundred miles' dispersion. Now, every time a sunspot gets hit amidships with a lady sunspot, the beam goes off on a tangent. We've lost the beam eleven times in a week. That's more times than I've lost it in three years!"

"O.K.," said Channing. "So what? Mastermind is responsible. We'll sit tight and wait for developments. In any display of abilities, we can spike Mr. Burbank. Have another drink?"

"Got any more? If you've not, I've got a couple of cases cached underneath the bed in my apartment."

"I've plenty," said Channing. "And I'll need plenty. I have exactly twenty-two hours left in which to produce something comparable to the telephone, the electric light, the airplane or the expanding universe! Phooey. Pour me another, Arden."

A knock at the door; a feminine voice interrupted simultaneously. "May I come in?"

It was Walt's secretary. She looked worried. In one hand she waved another letter.

"Another communiqué?" asked Channing.

"Worse. Notice that for the last three hours there have been less than twelve percent of messages relayed!"

"Five minutes' operation out of an hour," said Channing. "Where's that from?"

"Came out on the Terra beam. It's marked number seventeen, so I guess that sixteen other tries have been made."

"What has Mastermind tried this time?" Channing stormed. He tore out of the room and headed for the Director's office on a dead run. On the way, he hit his shoulder on the door, caromed off the opposite wall, righted himself, and was gone in a flurry of flying feet. Three heads popped out of doors to see who was making the noise.

Channing skidded into Burbank's office on his heels. "What gives?" he snapped. "D'ya realize that we've lost the beam? What have you been doing?"

"It is a minor difficulty," said Burbank calmly. "We will iron it out presently."

"Presently! Our charter doesn't permit interruptions of service of that magnitude. I ask again: What are you doing?"

"You, as Electronics Engineer, have no right to question me. I repeat, we shall iron out the difficulty presently."

Channing snorted and tore out of Burbank's office. He headed for the Office of Beam Control, turned the corner on one foot and slammed the door roughly.

"Chuck!" he yelled. "Chuck Thomas! Where are you?"

No answer. Channing left the beam office and headed for the master control panels, out near the airlock end of Venus Equilateral. He found Thomas stewing over a complicated piece of apparatus.

"Chuck, for the love of Michael, what in the devil is going on?"

"Thought you knew," answered Thomas. "Burbank had the crew install photoelectric mosaic banks on the beam controls. He intends to use the photomosaics to keep Venus, Terra and Mars on the beam."

"Great Sniveling Scott! They tried that in the last century and tossed it out three days later. Where's the crew now?"

"Packing for home. They've been laid off!"

"Get 'em back! Put 'em to work. Turn off those darned photomosaics and use the manual again. We've lost every beam we ever had."

A sarcastic voice came in at this point. "For what reason do you interfere with my improvements?" sneered the voice. "Could it be that you are accepting graft from the employees to keep them on the job by preventing the installation of superior equipment?"

Channing turned on his toe and let Burbank have one. It was a neat job, coming up at the right time and connecting sweetly. Burbank went over on his head.

"Get going," Channing snapped at Thomas.

Charles Thomas grinned. It was not Channing's one-ninety that decided him to comply. He left.

Channing shook Burbank's shoulder. He slapped the man's face. Eyes opened, accusing eyes rendered mute by a very sore jaw, tongue and throat.

"Now listen," snapped Channing. "Listen to every word! Mosaic directors are useless. Know why? It is because of the

lag. At planetary distances, light takes an appreciable time to reach. Your beam wobbles. Your planet swerves out of line because of intervening factors; varying magnetic fields, even the bending of light due to gravitational fields will shake the beam microscopically. But, Burbank, a microscopic discrepancy is all that is needed to bust things wide open. You've got to have experienced men to operate the beam controls. Men who can think. Men who can, from experience, reason that this fluctuation will not last, but will swing back in a few seconds, or that this type of swerving will increase in magnitude for a half-hour, maintain the status and then return, pass through zero and find the same level on the minus side.

"Since light and centimeter waves are not exactly alike in performance, a field that will serve one may not affect the other as much. Ergo, your photomosaic is useless. The photoelectric mosaic is a brilliant gadget for keeping a plane in a spotlight or for aiming a sixteen-inch gun, but it is worthless for anything over a couple of million miles. So I've called the men back to their stations. And don't try anything foolish again without consulting the men who are paid to think!"

Channing got up and left. As he strode down the stairs to the apartment level, he met many of the men who had been laid off. None of them said a word, but all of them wore bright, knowing smiles.

By Monday morning, however, Burbank was himself again. The rebuff given him by Don Channing had worn off and he was sparkling with ideas. He speared Franks with the glitter in his eyes and said, "If our beams are always on the center, why is it necessary to use multiplex diversity?"

Franks smiled. "You're mistaken," he told Burbank. "They're not always on the button. They vary. Therefore, we use diversity transmission so that if one beam fails momentarily, one of the other beams will bring the signal in. It is analogous to tying five or six ropes onto a hoisted stone. If one breaks, you have the others."

"You have them running all the time, then?"

"Certainly. At several minutes of time lag in transmission, to try and establish a beam failure of a few seconds' duration is utter foolishness."

"And you disperse the beam to a thousand miles wide to keep the beam centered at any variation?" Burbank shot at Channing.

"Not for *any* variation. Make that any *normal* gyration and I'll buy it."

"Then why don't we disperse the beam to two or three

thousand miles and do away with diversity transmission?" asked Burbank triumphantly.

"Ever heard of fading?" asked Channing with a grin. "Your signal comes and goes. Not gyration; it just gets weaker. It fails for want of something to eat, I guess, and takes off after a wandering cosmic ray. At any rate, there are many times per minute that one beam will be right on the nose and yet so weak that our strippers cannot clean it enough to make it usable. Then the diversity system comes in handy. Our coupling detectors automatically select the proper signal channel. It takes the one that is the strongest and subdues the rest within itself."

"Complicated?"

"It was done in the heyday of radio—1935 or so. Your two channels come in to a common detector. Automatic volume-control voltage comes from the single detector and is applied to all channels. This voltage is proper for the strongest channel, but is too high for the ones receiving the weaker signal, blocking them by rendering them insensitive. When the strong channel fades and the weak channel rises, the detector follows down until the two signal channels are equal and then it rises with the stronger channel."

"I see," said Burbank. "Has anything been done about fading?"

"It is like the weather, according to Mark Twain," smiled Channing. "'Everybody talks about it, but nobody does anything about it.' About all we've learned is that we can cuss it out and it doesn't cuss back."

"I think it should be tried," said Burbank.

"If you'll pardon me, it has been tried. The first installation at Venus Equilateral was made that way. It didn't work, though we used more power than all of our diversity transmitters together. Sorry."

"Have you anything to report?" Burbank asked Channing.

"Nothing. I've been more than busy investigating the trouble we've had in keeping the beams centered."

Burbank said nothing. He was stopped. He hoped that the secret of his failure was not generally known, but he knew at the same time that when three hundred men are aware of something interesting, some of them will see to it that all the others involved will surely know. He looked at the faces of the men around the table and saw suppressed mirth in every one of them. Burbank writhed in inward anger. But he was a good poker player. He didn't show it at all.

He then went on to other problems. He ironed some out,

others he shelved for the time being. Burbank was a good businessman. But like so many other businessmen, Burbank had the firm conviction that if he had the time to spare and at the same time was free of the worries and paperwork of his position, he could step into the laboratory and show the engineers how to make things hum. He was infuriated every time he saw one of the engineering staff sitting with hands behind head, lost in a gazy, unreal land of deep thought. Though he knew better, he was often tempted to raise hell because the man was obviously loafing.

But give him credit. He could handle business angles to perfection. In spite of his tangle over the beam control, he had rebounded excellently and had ironed out all of the complaints that had poured in. Ironed it out to the satisfaction of the injured party as well as the Interplanetary Communications Commission, who were interested in anything that cost money.

He dismissed the conference and went to thinking. And he assumed the same pose that infuriated him in other men under him: hands behind head, feet upon desk.

The moving-picture theater was dark. The hero reached longing arms to the heroine, and there was a sort of magnetic attraction. They approached one another. But the spark misfired. It was blacked out with a nice slide of utter blackness that came from the screen and spread its lightlessness all over the theater. In the ensuing darkness, several osculations resounded that were more personal and more satisfying than the censored clinch. The lights flashed on and several male heads moved back hastily. Female lips smiled happily. Some of them parted in speech.

One of them said: "Why, Mr. Channing!"

"Shut up, Arden," snapped the man. "People will think that I've been kissing you."

"If someone else was taking advantage of the situation," she said, "you got gypped. I thought I was kissing you and I cooked with gas!"

"Did you ever try that before?" asked Channing interestedly.

"Why?" she asked.

"I liked it. I merely wondered, if you'd worked it on other men, what there was about you that kept you single."

"They all died after the first application," she said. "They couldn't take it."

"Let me outta here! I get the implication. I am the first bird that hasn't died, hey?" He yawned luxuriously.

"Company or the hour?" asked Arden.

"Can't be either," he said. "Come on, let's break a bottle of beer open. I'm dry!"

"I've got a slight headache," she told him. "From what, I can't imagine."

"I haven't a headache, but I'm sort of logy."

"What have you been doing?" asked Arden. "Haven't seen you for a couple of days."

"Nothing worth mentioning. Had an idea a couple of days ago and went to work on it."

"Haven't been working overtime or missing breakfast?"

"Nope."

"Then I don't see why you should be ill. I can explain my headache away by attributing it to eyestrain. Since Billyboy came here, and censored the movies to the bone, the darned things flicker like anything. But eyestrain doesn't create an autointoxication. So, my fine fellow, what have you been drinking?"

"Nothing that I haven't been drinking since I first took to my second bottlehood some years ago."

"You wouldn't be suffering from a hangover from that hangover you had a couple of weeks ago?"

"Nope. I swore off. Never again will I try to drink a whole quart of Two Moons in one evening. It got me."

"It had you for a couple of days." Arden laughed. "All to itself."

Don Channing said nothing. He recalled, all too vividly, the rolling of the tummy that ensued after that session with the only fighter that hadn't yet been beaten: Old John Barleycorn.

"How are you coming on with Burbank?" asked Arden. "I haven't heard a rave for—well, ever since Monday morning's conference. Three days without a nasty dig at Our Boss. That's a record."

"Give the devil his due. He's been more than busy placating irate citizens. That last debacle with the beam control gave him a real Moscow winter. His reforms came to a stop whilst he entrenched. But he's been doing an excellent job of squirming out from under. Of course, it has been helped by the fact that even though the service was rotten for a few hours, the customers couldn't rush out to some other agency to get communications with the other planets."

"Sort of: 'Take us, lousy as we are?' "

"That's it."

Channing opened the door to his apartment and Arden went in. Channing following, and then stopped cold.

"Great Jeepers!" he said in an awed tone. "If I didn't know—"

"Why, Don! What's so startling?"

"Have you noticed?" he asked. "It smells like the inside of a chicken coop in here!"

Arden sniffed. "It does sort of remind me of something that died and couldn't get out of its skin." She smiled. "I'll hold my breath. Any sacrifice for a drink."

"That isn't the point. This is purified air. It should be as sweet as a baby's breath."

"Some baby," whistled Arden. "What's baby been drinking?"

"It wasn't cow juice. What I've been trying to put over is that the air doesn't seem to have been changed in here for nine weeks."

Channing went to the ventilator and lit a match. The flame bent over, flickered, and went out.

"Air intake is O.K.," he said. "Maybe it is I. Bring on that bottle, Channing; don't keep the lady waiting."

He yawned again, deeply and jaw-stretchingly. Arden yawned, too, and the thought of both of them stretching their jaws to the breaking-off point made both of them laugh foolishly.

"Arden, I'm going to break one bottle of beer with you, after which I'm going to take you home, kiss you good night and toss you in your own apartment. Then I'm coming back here and I'm going to hit the hay!"

Arden took a long, deep breath. "I'll buy that," she said. "And tonight, it wouldn't take much persuasion to induce me to snooze right here in this chair!"

"Oh, fine," Don cheered. "That would fix me up swell with the neighbors. I'm not going to get shot-gunned into anything like that!"

"Don't be silly," said Arden.

"From the look in your eye," said Channing, "I'd say that you were just about to do that very thing. I was merely trying to dissolve any ideas that you might have."

"Don't bother," she said pettishly. "I haven't any ideas. I'm as free as you are, and I intend to stay that way!"

Channing stood up. "The next thing we know, we'll be fighting," he observed. "Stand up, Arden. Shake."

Arden stood up, shook herself, and then looked at Chan-

ning with a strange light in her eyes. "I feel sort of dizzy," she admitted. "And everything irritates me."

She passed a hand over her eyes wearily. Then, with a visible effort, she straightened. She seemed to throw off her momentary ill feeling instantly, and she smiled at Channing, and was her normal self in less than a minute.

"What is it?" she asked. "Do you feel funny, too?"

"I do!" he said. "I don't want that beer. I want to snooze."

"When Channing would prefer snoozing to boozing he is sick," she said. "Come on, fellow, take me home."

Slowly they walked down the long hallway. They said nothing. Arm in arm they went, and when they reached Arden's door, their good-night kiss lacked enthusiasm. "See you in the morning," said Don.

Arden looked at him. "That was a little flat. We'll try it again—tomorrow or next week."

Don Channing's sleep was broken by dreams. He was warm. His dreams depicted him in a humid, airless chamber, and he was forced to breathe that same stale air again and again. He awoke in a hot sweat, weak and feeling—lousy!

He dressed carelessly. He shaved hit-or-miss. His morning coffee tasted flat and sour. He left the apartment in a bad mood, and bumped into Arden at the corner of the hall.

"Hello," she said. "I feel rotten. But you have improved. Or is that passionate breathing just a lack of fresh air!"

"Hell! That's it!" he said.

He snapped up his wristwatch, which was equipped with a stopwatch hand. He looked about, and finding a man sitting on a bench, apparently taking it easy while waiting for someone, Channing clicked the sweep hand into gear. He started to count the man's respiration.

"What gives?" asked Arden. "What's 'It'? Why are you so excited? Did I say something?"

"You did," said Channing after fifteen seconds. "That bird's respiration is better than fifty! This whole place is filled to the gills with carbon dioxide. Come on, Arden, let's get going!"

Channing led the girl by several yards by the time that they were within sight of the elevator. He waited for her, and then sent the car upward at a full throttle. Minutes passed, and they could feel that stomach-rising sensation that comes when gravity is lessened. Arden clasped her hands over her middle and hugged. She squirmed and giggled.

"You've been up to the axis before," said Channing. "Take long, deep breaths."

The car came to a stop with a slowing effect. A normal braking stop would have catapulted them against the ceiling.

"Come on," he grinned at her, "here's where we make time!"

Channing looked up at the little flight of stairs that led to the innermost level. He winked at Arden and jumped. He passed up through the opening easily. "Jump," he commanded. "Don't use the stairs."

Arden jumped. She sailed upward, and as she passed through the opening, Channing caught her by one arm and stopped her flight. "At that speed you'd go right on across," he said.

She looked up, and there, about two hundred feet overhead, she could see the opposite wall.

Channing snapped on the lights. They were in a room two hundred feet in diameter and three hundred feet long. "We're at the center of the station," Channing informed her. "Beyond that bulkhead is the air lock. On the other side of the other bulkhead, we have the air plant, the storage spaces and several rooms of machinery. Come on," he said.

He took her by the hand and with a kick he propelled himself along on a long, curving course to the opposite side of the inner cylinder. He gained the opposite bulkhead as well.

"Now, that's what I call traveling," said Arden. "But my tummy goes *whoosh, whoosh* every time we cross the center."

Channing operated a heavy door. They went in through rooms full of machinery and into rooms stacked to the center with boxes; stacked from the wall to the center and then packed with springs. Near the axis of the cylinder, things weighed so little that packing was necessary to keep them from floating around.

"I feel giddy," said Arden.

"High in oxygen," said he. "The CO₂ drops to the bottom, being heavier. Then, too, the air is thinner up here because centrifugal force swings the whole out to the rim. Out there we are so used to 'down' that here, a half-mile above—or to the center, rather—we have trouble in saying, technically, what we mean. Watch!"

He left Arden standing and walked rapidly around the inside of the cylinder. Soon he was standing on the steel plates directly over her head. She looked up, and shook her head.

"I know why," she called, "but it still makes me dizzy. Come down from up there or I'll be sick."

Channing made a neat dive from his position above her head. He did it merely by jumping upward from his place toward her place, apparently hanging head down from the ceiling. He turned a neat flip-flop in the air and landed easily beside her. Immediately, for both of them, things became right-side-up again.

Channing opened the door to the room marked AIR PLANT. He stepped in, snapped on the lights, and gasped in amazement.

"Hell!" he groaned.

The place was empty. Completely empty. Absolutely and irrevocably vacant. Oh, there was some dirt on the floor and some trash in the corners, and a trail of scratches on the floor to show that the life-giving air plant had been removed, hunk by hunk, out through another door at the far end of the room.

"Whoa, Tillie!" screamed Don. "We've been stabbed! Arden, get on the type and have— No wait a minute until we find out a few more things about this!"

They made record time back to the office level. They found Burbank in his office, leaning back, and talking to someone on the phone.

Channing tried to interrupt, but Burbank removed his nose from the telephone long enough to snarl, "Can't you see I'm busy? Have you no manners or respect?"

Channing, fuming inside, swore inwardly. He sat down with a show of being calm and folded his hands over his abdomen like the famed statue of Buddha. Arden looked at him, and for all the trouble they were in, she couldn't help giggling. Channing, tall, lanky and strong, looked as little as possible like the popular, pudgy figure of the sitting Buddha.

A minute passed.

Burbank hung up the phone.

"Where does Venus Equilateral get its air from?" snapped Burbank.

"That's what I want—"

"Answer me, please. I'm worried."

"So am I. Something—"

"Tell me first, from what source does Venus Equilateral get its fresh air?"

"From the air plant. And that is—"

"There must be more than one," said Burbank thoughtfully.

"There's only one."

"There *must* be more than one. We couldn't live if there weren't," said the Director.

"Wishing won't make it so. There is only one."

"I tell you, there must be another. Why, I went into the one up at the axis day before yesterday and found that instead of a bunch of machinery, running smoothly, purifying air, and sending it out to the various parts of the station, all there was was a veritable jungle of weeds. Those weeds, Mr. Channing, looked as though they must have been put in there years ago. Now, where did the air-purifying machinery go?"

Channing listened to the latter half of Burbank's speech with his chin at half-mast. He looked as though a feather would knock him clear across the office.

"I had some workmen clear the weeds out. I intend to replace the air machinery as soon as I can get some new material sent from Terra."

Channing managed to blink. It was an effort. "You had workmen toss the weeds out . . ." he repeated dully. "The weeds . . ."

There was silence for a minute. Burbank studied the man in the chair as though Channing were a piece of statuary. Channing was just as motionless.

"Channing, man, what ails you—" Burbank began. The sound of Burbank's voice aroused Channing from his shock.

Channing leaped to his feet. He landed on his heels, spun and snapped at Arden: "Get on the type. Have 'em slap as many oxy-drums on the fastest ship they've got! Get 'em here at full throttle. Tell 'em to load up the pilot and crew with gravanol and not to spare the horsepower! Scram!"

Arden gasped. She fled from the office.

"Burbank, what did you think an air plant was?" snapped Channing.

"Why, isn't it some sort of purifying machinery?" asked the wondering Director.

"What better purifying machine is there than a plot of grass!" shouted Channing. "Weeds, grass, flowers, trees, alfalfa, wheat or anything that grows and uses chlorophyll. We breathe oxygen, exhale CO_2 . Plants inhale CO_2 and exude oxygen. An air plant means just that. It is a specialized type of Martian sawgrass that is chlorophyll. We breathe oxygen, exhale CO_2 . Plants inhaling dead air and revitalizing it. And you've tossed the weeds out!" Channing snorted in anger. "We've spent years getting that plant so that it will grow just right. It got so good that the CO_2 detectors weren't even needed. The balance was so adjusted that they haven't even

been turned on for three of four years. They were just another source of unnecessary expense. Why, save for a monthly inspection, that room isn't even opened, so efficient is the Martian sawgrass. We, Burbank, are losing oxygen!"

The Director grew white. "I didn't know," he said.

"Well, you know now. Get on your horse and do something. At least, Burbank, stay out of my way while I do something."

"You have a free hand," said Burbank. His voice sounded beaten.

Channing left the office of the Director and headed for the chem lab. "How much potassium chlorate, nitrate, sulphate, and other oxygen-bearing compounds have you?" he asked. "That includes mercuric oxide, spare water, or anything else that will give us oxygen if broken down."

A ten-minute wait followed until the members of the chem lab took a hurried inventory.

"Good," said Channing. "Start breaking it down. Collect all the oxygen you can in containers. This is the business! It has priority! Anything, no matter how valuable, must be scrapped if it can facilitate the gathering of oxygen. God knows, there isn't by half enough—not even a tenth. But try, anyway."

Channing headed out of the chemistry laboratory and into the electronics lab. "Jimmie," he shouted, "get a couple of stone jars and get an electrolysis outfit running. Fling the hydrogen out of a convenient outlet into space and collect the oxygen. Water, I mean. Use tap water, right out of the faucet."

"Yeah, but—"

"Jimmie, if we don't breathe, what chance have we to go on drinking? I'll tell you when to stop."

"O.K., Doc," said Jimmie.

"And look. As soon as you get that running, set up a CO₂ indicator and let me know the percentage at the end of each hour! Get me?"

"I take it that something has happened to the air plant?"

"It isn't functioning," said Channing shortly. He left the puzzled Jimmie and headed for the beam control room. Jimmie continued to wonder about the air plant. How in the devil could an air plant cease functioning unless it were—*dead!* Jimmie stopped wondering and began to operate on his electrolysis setup furiously.

Channing found the men in the beam control room worried and ill at ease. The fine coordination that made them ex-

pert in their line was ebbing. The nervous work demanded perfect motor control, excellent perception and a fine power of reasoning. The perceptible lack of oxygen at this high level was taking its toll already.

"Look, fellows, we're in a mess. Until further notice, take five-minute shifts. We've got about thirty hours to go. If the going gets tough, drop it to three-minute shifts. But, fellows, keep those beams centered until you drop!"

"We'll keep 'em going if we have to call our wives up here to run 'em for us," said one man. "What's up?"

"Air plant's sour. Losing oxy. Got a shipload coming out from Terra, be here in thirty hours. But upon you fellows will rest the responsibility of keeping us in touch with the rest of the system. If you fail, we could call for help until hell freezes us all in—and no one would hear us!

"We'll keep 'em rolling," said a little fellow who had to sit on a tall stool to get even with the controls.

Channing looked out of the big, faceted plexiglass dome that covered one entire end of the Venus Equilateral Station. "Here messages go in and out," he mused. "The other end brings us things that take our breath away."

Channing was referring to the big air lock at the other end of the station, three miles away, right through the center.

At the center of the dome, there was a sighting 'scope. It kept Polaris on a marked circle, keeping the station exactly even with the Terrestrial North. About the periphery of the dome, looking out across space, the beam-control operators were sitting, each with a hundred-foot parabolic reflector below his position, outside the dome, and under the rim of the transparent bowl. These reflectors shot the interworld signals across space in tight beams, and the men, half the time anticipating the vagaries of space warp, kept them centered on the proper, shining speck in that field of stars.

Above his head the stars twinkled. Puny man, setting his will against the monstrous void. Puny man, dependent upon atmosphere. "Nature abhors a vacuum," said Spinoza," groaned Channing. "Nuts! If nature abhorred a vacuum, why did she make so much of it!"

Arden Westland entered the apartment without knocking. "I'd give my right arm up to here for a cigarette," she said, marking above the elbow with the other hand.

"Na-hah," said Channing. "Can't burn oxygen."

"I know. I'm tired, I'm cold and I'm ill. Anything you can do for a lady?"

"Not as much as I'd like to do," said Channing. "I can't help much. We've got most of the place stopped off with the airtight doors. We've been electrolyzing water, baking KClO_3 and everything else we can get oxy out of. I've a crew of men trying to absorb the CO_2 content and we are losing. Of course, I've known all along that we couldn't support the station on the meager supplies we have on hand. But we'll win in the end. Our micro-cosmic world is getting a shot in the arm in a few hours that will reset the balance."

"I don't see why we didn't prepare for this emergency," said Arden.

"This station is well balanced. There are enough people here and enough space to make a little world of our own. We can establish a balance that is pretty darned close to perfect. The imperfections are taken care of by influxes of supplies from the system. Until Burbank upset the balance, we could go on forever, utilizing natural purification of air and water. We grow a few vegetables and have some meat critters to give milk and steak. The energy to operate Venus Equilateral is supplied from the uranium pile. Atomic power, if you please. Why should we burden ourselves with a lot of cubic feet of supplies that would take up room necessary to maintain our balance? We are not in bad shape. We'll live, though we'll all be a bunch of tired, irritable people who yawn in one another's faces."

"And after it is over?"

"We'll establish the balance. Then we'll settle down again. We can take up where we left off," said Don.

"Not quite. Venus Equilateral has been seared by fire. We'll be tougher and less tolerant of outsiders. If we were a closed corporation before, we'll be tighter than a vacuum-packed coffee can afterwards. And the first bird that cracks us will get hissed at."

Three superliners hove into sight at the end of thirty-one hours. They circled the station, signaling by helio. They approached the air lock end of the station and made contact. The air lock was opened and spacesuited figures swarmed over the South End Landing Stage. A stream of big oxygen tanks was brought into the air lock, admitted, and taken to the last bulwark of people huddled on the fourth level.

From one of the ships came a horde of men carrying huge square trays of dirt and green, growing sawgrass.

For six hours, Venus Equilateral was the scene of wild, furious activity. The dead air was blown out of bad areas, and the hissing of oxygen tanks was heard in every room.

Gradually the people left the fourth level and returned to their rightful places. The station rang with laughter once more, and business, stopped short for want of breath, took a deep lungful of fresh air and went back to work.

The superliners left. But not without taking a souvenir. Francis Burbank went with them. His removal notice was on the first ship, and Don Channing's appointment as Director of Venus Equilateral was on the second.

Happily he entered the Director's office once more. He carried with him all the things he had removed just a few short weeks before. This time he was coming to stay.

Arden entered the office behind him. "Home again?" she asked.

"Yep," he grinned at her. "Open file B, will you, and break out a container of my favorite beverage?"

"Sure thing," she said.

There came a shout of glee. "Break out four glasses," she was told from behind. It was Walt Franks and Joe.

Arden proposed the toast. "Here's to a closed corporation," she said.

They drank on that.

She went over beside Don and took his arm. "You see?" she said, looking up into his eyes. "We aren't the same. Things have changed since Burbank came, and went. Haven't they?"

"They have," laughed Channing. "And now that you are my secretary, it is no longer proper for you to shine up to me like that. People will talk."

"What's he raving about?" asked Joe.

Channing answered, "It is considered highly improper for a secretary to make passes at her boss. Think of what people will say; think of his wife and kids."

"You have neither."

"People?" asked Channing innocently.

"No—you ape—the other."

"Maybe so," Don nodded, "but it is still in bad taste for a secretary—"

"No man can use that tone of voice on me!" stormed Arden with a glint in her eye. "I resign! You can't call me a secretary!"

"But Arden, darling—"

Arden relaxed in the crook of Channing's arm. She winked at Walt and Joe. "Me," she said, "I've been promoted!"

THE WEAPONS SHOP

Astounding,

December

by A. E. van Vogt

A. E. van Vogt started what became The Weapons Shop series with "The Seesaw" (see Volume 3 of this series), and in this novelette gave the science fiction world one of those phrases that achieve instant fame—"The right to buy weapons is the right to be free." The Weapons Shops represent forces operating behind the scenes who periodically attempt to balance and sometimes defeat the powers who are in control in the society in which the action takes place. Here van Vogt (like Heinlein in much of his fiction) is really presenting us with a libertarian answer to the problems of centralized bureaucracy and imperial government. And while this may be a simplistic answer, in this case it is filled with the sense of wonder for which van Vogt is renowned.

The series appeared in book form as The Weapon Makers (1946) and The Weapon Shops of Isher (1951).

(I can never hear the phrase, "The right to buy weapons is the right to be free" without wanting to start an argument. I know that liberty is dead if *only* the government can make use of weapons, but that is only true if the governed are also deprived of due process of law. And what of the alternative—when weapons are available to every hood, every nitwit, every self-proclaimed liberator and guerrilla. We see the results everywhere these days when all you have to do is plant a bomb or shoot unarmed people from ambush to be a hero—I. A.)

The village at night made a curiously timeless picture. Fara walked contentedly beside his wife along the street. The air was like wine; and he was thinking dimly of the artist who had come up from Imperial City and made what the telestats called—he remembered the phrase vividly—"a symbolic painting reminiscent of a scene in the electrical age of seven thousand years ago."

Fara believed that utterly. The street before him with its weedless, automatically tended gardens, its shops set well back among the flowers, its perpetual hard, grassy sidewalks and its street lamps that glowed from every pore of their structure—this was a restful paradise where time had stood still.

And it was like being a part of life that the great artist's picture of this quiet, peaceful scene before him was now in the collection of the empress herself. She had praised it, and naturally the thrice-blest artist had immediately and humbly begged her to accept it.

What a joy it must be to be able to offer personal homage to the glorious, the divine, the serenely gracious and lovely Innelda Isher, one thousand one hundred eightieth of her line.

As they walked, Fara half turned to his wife, In the dim light of the nearest street lamp, her kindly, still youthful face was almost lost in shadow. He murmured softly, instinctively muting his voice to harmonize with the pastel shades of night:

"She said—our empress said—that our little village of Glay seemed to her to have in it all the wholesomeness, the gentleness, that constitutes the finest qualities of her people. Wasn't that a wonderful thought, Creel? She must be a marvelously understanding woman. I—"

He stopped. They had come to a side street, and there was something about a hundred and fifty feet along it that—

"Look!" Fara said hoarsely.

He pointed with rigid arm and finger at a sign that glowed in the night, a sign that read:

FINE WEAPONS

**THE RIGHT TO BUY WEAPONS IS THE RIGHT
TO BE FREE**

Fara had a strange, empty feeling as he stared at the blazing sign. He saw that other villagers were gathering. He said finally, huskily, "I've heard of these shops. They're places of infamy, against which the government of the empress will act one of these days. They're built in hidden factories, and then transported whole to towns like ours and set up in gross defiance of property rights. That one wasn't there an hour ago."

Fara's face hardened. His voice had a harsh edge in it, as he said, "Creel, go home."

Fara was surprised when Creel did not move off at once. All their married life she had had a pleasing habit of obedience that had made cohabitation a wonderful thing. He saw that she was looking at him wide-eyed, and that it was a timid alarm that held her there. She said, "Fara, what do you intend to do? You're not thinking of—"

"Go home!" Her fear brought out all the grim determination in his nature. "We're not going to let such a monstrous thing desecrate our village. Think of it"—his voice shivered before the appalling thought—"this fine, old-fashioned community, which we had resolved always to keep exactly as the empress has it in her picture gallery, debauched now, ruined by this . . . this thing— But we won't have it; that's all there is to it."

Creel's voice came softly out of the half-darkness of the street corner, the timidity gone from it: "Don't do anything rash, Fara. Remember it is not the first new building to come into Glay—since the picture was painted."

Fara was silent. This was a quality of his wife of which he did not approve, this reminding him unnecessarily of unpleasant facts. He knew exactly what she meant. The gigantic, multitentacled corporation, Automatic Atomic Motor Repair Shops, Inc., had come in under the laws of the state with their flashy building, against the wishes of the village council—and had already taken half of Fara's repair business.

"That's different!" Fara growled finally. "In the first place people will discover in good time that these new automatic repairers do a poor job. In the second place it's fair competition. But this weapon shop is a defiance of all the decencies that make life under the House of Isher such a joy. Look at the hypocritical sign: 'The right to buy weapons—' Aaa-aahh!"

He broke off with: "Go home, Creel. We'll see to it that they sell no weapons in this town."

He watched the slender woman-shape move off into the shadows. She was halfway across the street when a thought occurred to Fara. He called, "And if you see that son of ours hanging around some street corner, take him home. He's got to learn to stop staying out so late at night."

The shadowed figure of his wife did not turn; and after watching her for a moment moving along against the dim background of softly glowing street lights, Fara twisted on his heel, and walked swiftly toward the shop. The crowd was growing larger every minute and the night pulsed with excited voices.

Beyond doubt, here was the biggest thing that had ever happened to the village of Glay.

The sign of the weapon shop was, he saw, a normal-illusion affair. No matter what his angle of view, he was always looking straight at it. When he paused finally in front of the great display window, the words had pressed back against the store front, and were staring unwinkingly down at him.

Fara sniffed once more at the meaning of the slogan, then forgot the simple thing. There was another sign in the window, which read:

THE FINEST ENERGY WEAPONS IN THE KNOWN UNIVERSE

A spark of interest struck fire inside Fara. He gazed at that brilliant display of guns, fascinated in spite of himself. The weapons were of every size, ranging from tiny little finger pistols to express rifles. They were made of every one of the light, hard, ornamental substances: glittering glassein, the colorful but opaque Ordine plastic, viridescent magnesitic beryllium. And others.

It was the very deadly extent of the destructive display that brought a chill to Fara. So many weapons for the little village of Glay, where not more than two people to his knowledge had guns, and those only for hunting. Why, the thing was absurd, fantastically mischievous, utterly threatening.

Somewhere behind Fara, a man said: "It's right on Lan Harris' lot. Good joke on that old scoundrel. Will he raise a row!"

There was a faint titter from several men, that made an odd patch of sound on the warm, fresh air. And Fara saw that the man had spoken the truth. The weapon shop had a forty-foot frontage. And it occupied the very center of the green, gardenlike lot of tight-fisted old Harris.

Fara frowned. The clever devils, the weapon-shop people, selecting the property of the most disliked man in town, coolly taking it over and giving everybody an agreeable titillation. But the very cunning of it made it vital that the trick shouldn't succeed.

He was still scowling anxiously when he saw the plump figure of Mel Dale, the mayor. Fara edged toward him hurriedly, touched his hat respectfully, and said, "Where's Jor?"

"Here." The village constable elbowed his way through a little bundle of men. "Any plans?" he said.

"There's only one plan," said Fara boldly. "Go in and arrest them."

To Fara's amazement, the two men looked at each other, then at the ground. It was the big constable who answered shortly, "Door's locked. And nobody answers our pounding. I was just going to suggest we let the matter ride until morning."

"Nonsense!" His very astonishment made Fara impatient. "Get an ax and we'll break the door down. Delay will only encourage such ruffraff to resist. We don't want their kind in our village for so much as a single night. Isn't that so?"

There was a hasty nod of agreement from everybody in his immediate vicinity. Too hasty. Fara looked around puzzled at eyes that lowered before his level gaze. He thought: "They are all scared. And unwilling." Before he could speak, Constable Jor said, "I guess you haven't heard about those doors or these shops. From all accounts, you can't break into them."

It struck Fara with a sudden pang that it was he who would have to act here. He said, "I'll get my atomic cutting machine from my shop. That'll fix them. Have I your permission to do that, Mr. Mayor?"

In the glow of the weapon-shop window, the plump man was sweating visibly. He pulled out a handkerchief and wiped his forehead. He said, "Maybe I'd better call the commander of the Imperial garrison at Ferd, and ask them."

"No!" Fara recognized evasion when he saw it. He felt himself steel; the conviction came that all the strength in this

village was in him. "We must act ourselves. Other communities have let these people get in because they took no decisive action. We've got to resist to the limit. Beginning now. This minute. Well?"

The mayor's "All right!" was scarcely more than a sigh of sound. But it was all Fara needed.

He called out his intention to the crowd; and then, as he pushed his way out of the mob, he saw his son standing with some other young men staring at the window display.

Fara called, "Cayle, come and help me with the machine."

Cayle did not even turn; and Fara hurried on, seething. That wretched boy! One of these days he, Fara, would have to take firm action there. Or he'd have a no-good on his hands.

The energy was soundless—and smooth. There was no sputter, no fireworks. It glowed with a soft, pure white light, almost caressing the metal panels of the door—but not even beginning to sear them.

Minute after minute, the dogged Fara refused to believe the incredible failure, and played the boundlessly potent energy on that resisting wall. When he finally shut off his machine, he was perspiring freely.

"I don't understand it," he gasped. "Why—no metal is supposed to stand up against a steady flood of atomic force. Even the hard metal plates used inside the blast chamber of a motor take the explosions in what is called infinite series, so that each one has unlimited rest. That's the theory, but actually steady running crystallizes the whole plate after a few months."

"It's as Jor told you," said the mayor. "These weapon shops are—big. They spread right through the empire, *and they don't recognize the empress.*"

Fara shifted his feet on the hard grass, disturbed. He didn't like this kind of talk. It sounded—sacrilegious. And besides it was nonsense. It must be. Before he could speak, a man said somewhere behind him, "I've heard it said that that door will open only to those who cannot harm the people inside."

The words shocked Fara out of his daze. With a start, and for the first time, he saw that his failure had had a bad psychological effect. He said sharply, "That's ridiculous! If there were doors like that, we'd all have them. We—"

The thought that stopped his words was the sudden realization that *he* had not seen anybody try to open the door; and

with all this reluctance around him it was quite possible that—

He stepped forward, grasped at the doorknob and pulled. The door opened with an unnatural weightlessness that gave him the fleeting impression that the knob had come loose in his hand. With a gasp, Fara jerked the door wide open.

"Jor!" he yelled. "Get in!"

The constable made a distorted movement—distorted by what must have been a will to caution, followed by the instant realization that he could not hold back before so many. He leaped awkwardly toward the open door—and it closed in his face.

Fara stared stupidly at his hand, which was still clenched. And then, slowly, a hideous thrill coursed along his nerves. The knob had—withdrawn. It had twisted, become viscous and slipped amorphously from his straining fingers. Even the memory of that brief sensation gave him a feeling of abnormal things.

He grew aware that the crowd was watching with a silent intentness. Fara reached again for the knob, not quite so eagerly this time; and it was only a sudden realization of his reluctance that made him angry when the handle neither turned nor yielded in any way.

Determination returned in full force, and with it came a thought. He motioned to the constable. "Go back, Jor, while I pull."

The man retreated, but it did no good. And tugging did not help. The door would not open. Somewhere in the crowd, a man said darkly, "It decided to let you in, then it changed its mind."

"What foolishness are you talking!" Fara spoke violently. "*It* changed its mind. Are you crazy? A door has no sense."

But a surge of fear put a half-quaver into his voice. It was the sudden alarm that made him bold beyond all his normal caution. With a jerk of his body, Fara faced the shop.

The building loomed there under the night sky, in itself bright as day, huge in width and length, and alien, menacing, no longer easily conquerable. The dim queasy wonder came as to what the soldiers of the empress would do if they were invited to act. And suddenly—a bare, flashing glimpse of a grim possibility—the feeling grew that even they would be able to do nothing.

Abruptly, Fara was conscious of horror that such an idea

could enter his mind. He shut his brain tight, said wildly, "The door opened for me once. It will open again."

It did. Quite simply it did. Gently, without resistance, with that same sensation of weightlessness, the strange, sensitive door followed the tug of his fingers. Beyond the threshold was dimness, a wide, darkened alcove. He heard the voice of Mel Dale behind him, the mayor saying, "Fara, don't be a fool. What will you do inside?"

Fara was vaguely amazed to realize that he had stepped across the threshold. He turned, startled, and stared at the blur of faces "Why—" he began blankly; then he brightened; he said, "Why, I'll buy a gun, of course."

The brilliance of his reply, the cunning implicit in it, dazzled Fara for half a minute longer. The mood yielded slowly, as he found himself in the dimly lighted interior of the weapon shop.

It was preternaturally quiet inside. Not a sound penetrated from the night from which he had come, and the startled thought came that the people of the shop might actually be unaware that there was a crowd outside.

Fara walked forward gingerly on a rugged floor that muffled his footsteps utterly. After a moment, his eyes accustomed themselves to the soft lighting, which came like a reflection from the walls and ceilings. In a vague way, he had expected ultranormality; and the ordinariness of the atomic lighting acted like a tonic to her tensed nerves.

He shook himself angrily. Why should there be anything really superior? He was getting as bad as those credulous idiots out in the street.

He glanced around with gathering confidence. The place looked quite common. It was a shop, almost scantily furnished. There were showcases on the walls and on the floor, glitteringly lovely things, but nothing unusual, and not many of them—a few dozens. There was in addition a double, ornate door leading to a back room—

Fara tried to keep one eye on that door, as he examined several showcases, each with three or four weapons either mounted or arranged in boxes or holsters.

Abruptly, the weapons began to excite him. He forgot to watch the door, as the wild thought struck that he ought to grab one of those guns from a case, and then the moment someone came, force him outside where Jor would perform the arrest and—

Behind him, a man said quietly, "You wish to buy a gun?"

Fara turned with a jump. Brief rage flooded him at the way his plan had been wrecked by the arrival of the clerk.

The anger died as he saw that the intruder was a fine-looking, silver-haired man, older than himself. That was immeasurably disconcerting. Fara had an immense and almost automatic respect for age, and for a long second he could only stand there gaping. He said at last, lamely, "Yes, yes, a gun."

"For what purpose?" said the man in his quiet voice.

Fara could only look at him blankly. It was too fast. He wanted to get mad. He wanted to tell these people what he thought of them. But the age of this representative locked his tongue, tangled his emotions. He managed speech only by an effort of will:

"For hunting." The plausible word stiffened his mind. "Yes, definitely for hunting. There is a lake to the north of here," he went on more fulsomely, glibly, "and—"

He stopped, scowling, startled at the extent of his dishonesty. He was not prepared to go so deeply into prevarication. He said curtly, "For hunting."

Fara was himself again. Abruptly, he hated the man for having put him so completely at a disadvantage. With smoldering eyes he watched the old fellow click open a showcase, and take out a green-shining rifle.

As the man faced him, weapon in hand, Fara was thinking grimly, "Pretty clever, having an old man as a front." It was the same kind of cunning that had made them choose the property of Miser Harris. Icily furious, taut with his purpose, Fara reached for the gun; but the man held it out of his reach, saying, "Before I can even let you test this, I am compelled by the by-laws of the weapon shops to inform you under what circumstances you may purchase a gun."

So they had private regulations. What a system of psychology tricks to impress gullible fools! Well, let the old scoundrel talk. As soon as he, Fara, got hold of the rifle, he'd put an end to hypocrisy.

"We weapons makers," the clerk was saying mildly, "have evolved guns that can, in their particular ranges, destroy any machine or object made of what is called matter. Thus whoever possesses one of our weapons is the equal and more of any soldier of the empress. I say more because each gun is the center of a field of force which acts as a perfect screen against immaterial destructive forces. That screen offers no

resistance to clubs or spears or bullets, or other material substances, but it would require a small atomic cannon to penetrate the superb barrier it creates around its owner.

"You will readily comprehend," the man went on, "that such a potent weapon could not be allowed to fall, unmodified, into irresponsible hands. Accordingly, no gun purchased from us may be used for aggression or murder. In the case of the hunting rifle, only such specified game birds and animals as we may from time to time list in our display windows may be shot. Finally, no weapon can be resold without our approval. Is that clear?"

Fara nodded dumbly. For the moment, speech was impossible to him. The incredible, fantastically stupid words were still going round and around in his head. He wondered if he ought to laugh out loud, or curse the man for daring to insult his intelligence so tremendously.

So the gun mustn't be used for murder or robbery. So only certain birds and animals could be shot. And as for reselling it, suppose—suppose he bought this thing, took a trip of a thousand miles, and offered it to some wealthy stranger for two credits—who would ever know?

Or suppose he held up the stranger. Or shot him. How could the weapon shop ever find out? The thing was so ridiculous that—

He grew aware that the gun was being held out to him stock first. He took it eagerly, and had to fight the impulse to turn the muzzle directly on the old man. Mustn't rush this, he thought tautly. He said, "How does it work?"

"You simply aim it, and pull the trigger. Perhaps you would like to try it on a target we have."

Fara swung the gun up. "Yes," he said triumphantly, "and you're it. Now, just get over there to the front door, and then outside."

He raised his voice: "And if anybody's thinking of coming through the back door, I've got that covered, too."

He motioned jerkily at the clerk. "Quick now, move! I'll shoot! I swear I will."

The man was cool, unflustered. "I have no doubt you would. When we decided to attune the door so that you could enter despite your hostility, we assumed the capacity for homicide. However, this is our party. You had better adjust yourself accordingly, and look behind you—"

There was silence. Finger on trigger, Fara stood motion-

less. Dim thoughts came of all the *half-things* he had heard in his days about the weapon shops: that they had secret supporters in every district, that they had a private and ruthless hidden government, and that once you got into their clutches, the only way out was death and—

But what finally came clear was a mind picture of himself, Fara Clark, family man, faithful subject of the empress, standing here in this dimly lighted store, deliberately fighting an organization so vast and menacing that— He must have been mad.

Only—here he was. He forced courage into his sagging muscles. He said, "You can't fool me with pretending there's someone behind me. Now, get to that door. And *fast!*"

The firm eyes of the old man were looking past him. The man said quietly, "Well, Rad, have you all the data?"

"Enough for a primary," said a young man's baritone voice behind Fara. "Type A-7 conservative. Good average intelligence, but a Monaric development peculiar to small towns. One-sided outlook fostered by the Imperial schools present in exaggerated form. Extremely honest. Reason would be useless. Emotional approach would require extended treatment. I see no reason why we should bother. Let him live his life as it suits him."

"If you think," Fara said shakily, "that that trick voice is going to make me turn, you're crazy. That's the left wall of the building. I know there's no one there."

"I'm all in favor, Rad," said the old man, "of letting him live his life. But he was the prime mover of the crowd outside. I think he should be discouraged."

"We'll advertise his presence," said Rad. "He'll spend the rest of his life denying the charge."

Fara's confidence in the gun had faded so far that, as he listened in puzzled uneasiness to the incomprehensible conversation, he forgot it completely. He parted his lips, but before he could speak, the old man cut in, persistently, "I think a little emotion might have a long-run effect. Show him the palace."

Palace! The startling word tore Fara out of his brief paralysis. "See here," he began, "I can see now that you lied to me. This gun isn't loaded at all. It's—"

His voice failed him. Every muscle in his body went rigid. He stared like a madman. *There was no gun in his hands.*

"Why, you—" he began wildly. And stopped again. His mind heaved with imbalance. With a terrible effort he fought

off the spinning sensation, thought finally, tremblingly: Somebody must have sneaked the gun from him. That meant—there was someone behind him. The voice was no mechanical thing. Somehow, they had—

He started to turn—and couldn't. What in the name of— He struggled, pushing with his muscles. And couldn't move, couldn't budge, couldn't even—

The room was growing curiously dark. He had difficulty seeing the old man and— He would have shrieked then if he could. Because the weapon shop was gone. He was—

He was standing in the sky above an immense city.

In the sky, and nothing beneath him, nothing around him but air, and blue summer heaven, and the city a mile, two miles below.

Nothing, nothing— He would have shrieked, but his breath seemed solidly embedded in his lungs. Sanity came back as the remote awareness impinged upon his terrified mind that he was actually standing on a hard floor, and that the city must be a picture somehow focused directly into his eyes.

For the first time, with a start, Fara recognized the metropolis below. It was the city of dreams, Imperial City, capital of the glorious Empress Isher— From his great height, he could see the gardens, the gorgeous grounds of the silver palace, the official Imperial residence itself—

The last tendrils of his fear were fading now before a gathering fascination and wonder; they vanished utterly as he recognized with a ghastly thrill of uncertain expectancy that the palace was drawing nearer at great speed.

"Show him the palace," they had said. Did that mean, could it mean—

That spray of tense thoughts splattered into nonexistence, as the glittering roof flashed straight at his face. He gulped, as the solid metal of it passed through him, and then other walls and ceilings.

His first sense of imminent and mind-shaking desecration came as the picture paused in a great room where a score of men sat around a table at the head of which sat—a young woman.

The inexorable, sacrilegious, limitlessly powered cameras that were taking the picture swung across the table, and caught the woman full face.

It was a handsome face, but there was passion and fury twisting it now, and a very blaze of fire in her eyes, as she leaned forward, and said in a voice at once familiar—how

often Fara had heard its calm, measured tones on the telestats—and distorted. Utterly distorted by anger and an insolent certainty of command. That caricature of a beloved voice slashed across the silence as clearly as if he, Fara, was there in that room: "I want that skunk killed, do you understand? I don't care how you do it, but I want to hear by tomorrow night that he's dead."

The picture snapped off and instantly—it was as swift as that—Fara was back in the weapon shop. He stood for a moment, swaying, fighting to accustom his eyes to the dimness; and then—

His first emotion was contempt at the simpleness of the trickery—a motion picture. What kind of a fool did they think he was, to swallow something as transparently unreal as that? He'd—

Abruptly, the appalling lechery of the scheme, the indescribable wickedness of what was being attempted here brought red rage.

"Why, you scum!" he flared. "So you've got somebody to act the part of the empress, trying to pretend that— Why, you—"

"That will do," said the voice of Rad; and Fara shook as a big young man walked into his line of vision. The alarmed thought came that people who would besmirch so vilely the character of her imperial majesty would not hesitate to do physical damage to Fara Clark. The young man went on in a steely tone, "We do not pretend that what you saw was taking place this instant in the palace. That would be too much of a coincidence. But it was taken two weeks ago; the woman is the empress. The man whose death she ordered is one of her many former lovers. He was found murdered two weeks ago; his name, if you care to look it up in the new files, is Banton McCredde. However, let that pass. We're finished with you now and—"

"But I'm not finished," Fara said in a thick voice. "I've never heard or seen so much infamy in all my life. If you think this town is through with you, you're crazy. We'll have a guard on this place day and night, and nobody will get in or out. We'll—"

"That will do." It was the silver-haired man; and Fara stopped out of respect for age, before he thought. The old man went on: "The examination has been most interesting. As an honest man, you may call on us if you are ever in trouble. That is all. Leave through the side door."

It was all. Impalpable forces grabbed him, and he was shoved at a door that appeared miraculously in the wall, where seconds before the palace had been.

He found himself standing dazedly in a flower bed, and there was a swarm of men to his left. He recognized his fellow townsmen and that he was—outside.

The incredible nightmare was over.

"Where's the gun?" said Creel, as he entered the house half an hour later.

"The gun?" Fara stared at his wife.

"It said over the radio a few minutes ago that you were the first customer of the new weapon shop. I thought it was queer, but—"

He was eerily conscious of her voice going on for several words longer, but it was the purest jumble. The shock was so great that he had the horrible sensation of being on the edge of an abyss.

So that was what the young man had meant: "Advertise! We'll advertise his presence and—"

Fara thought: His reputation! Not that his was a great name, but he had long believed with a quiet pride that Fara Clark's motor repair shop was widely known in the community and countryside.

First, his private humiliation inside the shop. And now this—lying—to people who didn't know why he had gone into the store. Diabolical.

His paralysis ended, as a frantic determination to rectify the base charge drove him to the telestat. After a moment, the plump, sleepy face of Mayor Mel Dale appeared on the plate. Fara's voice made a barrage of sound, but his hopes dashed, as the man said, "I'm sorry, Fara. I don't see how you can have free time on the telestat. You'll have to pay for it. They did."

"They did!" Fara wondered vaguely if he sounded as empty as he felt.

"And they've just paid Lan Harris for his lot. The old man asked top price, and got it. He just phoned me to transfer the title."

"Oh!" The world was shattering. "You mean nobody's going to do anything. What about the Imperial garrison at Ferd?"

Dimly, Fara was aware of the mayor mumbling something

about the empress' soldiers refusing to interfere in civilian matters.

"Civilian matters!" Fara exploded. "You mean these people are just going to be allowed to come here whether we want them or not, illegally forcing the sale of lots by first taking possession of them?"

A sudden thought struck him breathless. "Look, you haven't changed your mind about having Jor keep guard in front of the shop?"

With a start, he saw that the plump face in the telestat plate had grown impatient. "Now, see here, Fara," came the pompous words, "let the constituted authorities handle this matter."

"But you're going to keep Jor there," Fara said doggedly.

The mayor looked annoyed, said finally peevishly: "I promised, didn't I? So he'll be there. And now—do you want to buy time on the telestat? It's fifteen credits for one minute. Mind you, as a friend, I think you're wasting your money. No one has ever caught up with a false statement."

Fara said grimly, "Put two on, one in the morning, one in the evening."

"All right. We'll deny it completely. Good night."

The telestat went blank; and Fara sat there. A new thought hardened his face. "That boy of ours—there's going to be a showdown. He either works in my shop, or he gets no more allowance."

Creel said: "You've handled him wrong. He's twenty-three and you treat him like a child. Remember, at twenty-three you were a married man."

"That was different," said Fara. "I had a sense of responsibility. Do you know what he did tonight?"

He didn't quite catch her answer. For the moment, he thought she said, "No; in what way did you humiliate him first?"

Fara felt too impatient to verify the impossible words. He rushed on: "He refused in front of the whole village to give me help. He's a bad one, all bad."

"Yes," said Creel in a bitter tone, "he is all bad. I'm sure you don't realize how bad. He's as cold as steel, but without steel's strength or integrity. He took a long time, but he hates even me now, because I stood up for your side so long, knowing you were wrong."

"What's that?" said Fara, startled; then gruffly: "Come, come, my dear, we're both upset. Let's go to bed."

He slept poorly.

There were days then when the conviction that this was a personal fight between himself and the weapon shop lay heavily on Fara. Grimly, though it was out of his way, he made a point of walking past the weapon shop, always pausing to speak to Constable Jor and—

On the fourth day, the policeman wasn't there.

Fara waited patiently at first, then angrily: then he walked hastily to his shop, and called Jor's house. No, Jor wasn't home. He was guarding the weapon store.

Fara hesitated. His own shop was piled with work, and he had a guilty sense of having neglected his customers for the first time in his life. It would be simple to call up the mayor and report Jor's dereliction. And yet—

He didn't want to get the man into trouble—

Out in the street, he saw that a large crowd was gathering in front of the weapon shop. Fara hurried. A man he knew greeted him excitedly: "Jor's been murdered, Fara!"

"Murdered!" Fara stood stock-still, and at first he was not clearly conscious of the grisly thought that was in his mind: Satisfaction! A flaming satisfaction. Now, he thought, even the soldiers would have to act. They—

With a gasp, he realized the ghastly tenor of his thoughts. He shivered, but finally pushed the sense of shame out of his mind. He said slowly, "Where's the body?"

"Inside."

"You mean, those . . . scum—" In spite of himself, he hesitated over the epithet; even now, it was difficult to think of the fine-faced, silver-haired old man in such terms. Abruptly, his mind hardened; he flared: "You mean those scum actually killed him, then pulled his body inside?"

"Nobody saw the killing," said a second man beside Fara, "but he's gone, hasn't been seen for three hours. The mayor got the weapon shop on the telestat, but they claim they don't know anything. They've done away with him, that's what, and now they're pretending innocence. Well, they won't get out of it as easily as that. Mayor's gone to phone the soldiers at Ferd to bring up some big guns and—"

Something of the intense excitement that was in the crowd surged through Fara, the feeling of big things brewing. It was the most delicious sensation that had ever tingled along his nerves, and it was all mixed with a strange pride that he had

been so right about this, that he at least had never doubted that here was evil.

He did not recognize the emotion as the full-flowering joy that comes to a member of a mob. But his voice shook, as he said, "Guns? Yes, that will be the answer, and the soldiers will have to come, of course."

Fara nodded to himself in the immensity of his certainty that the Imperial soldiers would now have no excuse for not acting. He started to say something dark about what the empress would do if she found out that a man had lost his life because the soldiers had shirked their duty, but the words were drowned in a shout:

"Here comes the mayor! Hey, Mr. Mayor, when are the atomic cannons due?"

There was more of the same general meaning, as the mayor's sleek, all-purpose car landed lightly. Some of the questions must have reached his honor, for he stood up in the open two-seater and held up his hand for silence.

To Fara's astonishment, the plump-faced man looked at him with accusing eyes. The thing seemed so impossible that, quite instinctively, Fara looked behind him. But he was almost alone; everybody else had crowded forward.

Fara shook his head, puzzled by that glare; and then, astoundingly, Mayor Dale pointed a finger at him, and said in a voice that trembled, "There's the man who's responsible for the trouble that's come upon us. Stand forward, Fara Clark, and show yourself. You've cost this town seven hundred credits that we could ill afford to spend."

Fara couldn't have moved or spoken to save his life. He just stood there in a maze of dumb bewilderment. Before he could even think, the mayor went on, and there was quivering self-pity in his tone, "We've all known that it wasn't wise to interfere with these weapon shops. So long as the Imperial government leaves them alone, what right have we to set up guards, or act against them? That's what I've thought from the beginning, but this man . . . this . . . this Fara Clark kept after all of us, forcing us to move against our wills, and so now we've got a seven-hundred-credit bill to meet and—"

He broke off with, "I might as well make it brief. When I called the garrison, the commander just laughed and said that Jor would turn up. And I had barely disconnected when there was a money call from Jor. He's on Mars."

He waited for the shouts of amazement to die down. "It'll

take three weeks for him to come back by ship, and we've got to pay for it, and Fara Clark is responsible. He—"

The shock was over. Fara stood cold, his mind hard. He said finally, scathingly, "So you're giving up and trying to blame me all in one breath. I say you're all fools."

As he turned away, he heard Mayor Dale saying something about the situation not being completely lost, as he had learned that the weapon shop had been set up in Glay because the village was equidistant from four cities, and that it was the city business the shop was after. This would mean tourists, and accessory trade for the village stores and—

Fara heard no more. Head high, he walked back toward his shop. There were one or two catcalls from the mob, but he ignored them.

He had no sense of approaching disaster, simply a gathering fury against the weapon shop, which had brought him to this miserable status among his neighbors.

The worst of it, as the days passed, was the realization that the people of the weapon shop had no personal interest in him. They were remote, superior, undefeatable. That unconquerableness was a dim, suppressed awareness inside Fara.

When he thought of it, he felt a vague fear at the way they had transferred Jor to Mars in a period of less than three hours, when all the world knew that the trip by fastest spaceship required nearly three weeks.

Fara did not go to the express station to see Jor arrive home. He had heard that the council had decided to charge Jor with half of the expense of the trip, on the threat of losing his job if he made a fuss.

On the second night after Jor's return, Fara slipped down to the constable's house, and handed the officer one hundred seventy-five credits. It wasn't that he was responsible, he told Jor, but—

The man was only too eager to grant the disclaimer, provided the money went with it. Fara returned home with a clearer conscience.

It was on the third day after that the door of his shop banged open and a man came in. Fara frowned as he saw who it was: Castler, a village hanger-on. The man was grinning.

"Thought you might be interested, Fara. Somebody came out of the weapon shop today."

Fara strained deliberately at the connecting bolt of a hard

plate of the atomic motor he was fixing. He waited with a gathering annoyance that the man did not volunteer further information. Asking questions would be a form of recognition of the worthless fellow. A developing curiosity made him say finally, grudgingly, "I suppose the constable promptly picked him up."

He supposed nothing of the kind, but it was an opening.

"It wasn't a man. It was a girl."

Fara knitted his brows. He didn't like the idea of making trouble for women. But—the cunning devils! Using a girl, just as they had used an old man as a clerk. It was a trick that deserved to fail, the girl probably a tough one who needed rough treatment. Fara said harshly, "Well, what's happened?"

"She's still out, bold as you please. Pretty thing, too."

The bolt off, Fara took the hard plate over to the polisher, and began patiently the long, careful task of smoothing away the crystals that heat had seared on the once shining metal. The soft throb of the polisher made the background to his next words:

"Has anything been done?"

"Nope. The constable's been told, but he says he doesn't fancy being away from his family for another three weeks, and paying the cost into the bargain."

Fara contemplated that darkly for a minute, as the polisher throbbed on. His voice shook with suppressed fury, when he said finally, "So they're letting them get away with it. It's all been as clever as hell. Can't they see that they musn't give an inch before these . . . these transgressors. It's like giving countenance to sin."

From the corner of his eye, he noticed that there was a curious grin on the face of the other. It struck Fara suddenly that the man was enjoying his anger. And there was something else in that grin; something—a secret knowledge.

Fara pulled the engine plate away from the polisher. He faced the ne'er-do-well, scathed at him, "Naturally, that sin part wouldn't worry you much."

"Oh," said the man nonchalantly, "the hard knocks of life make people tolerant. For instance, after you know the girl better, you yourself will probably come to realize that there's good in all of us."

It was not so much the words, as the curious I've-got-secret-information tone that made Fara snap: "What

do you mean—if I get to know the girl better! I won't even speak to the brazen creature."

"One can't always choose," the other said with enormous casualness. "Suppose he brings her home."

"Suppose who brings who home?" Fara spoke irritably. "Castler, you—"

He stopped; a dead weight of dismay plumped into his stomach; his whole being sagged. "You mean—" he said.

"I mean," replied Castler with a triumphant leer, "that the boys aren't letting a beauty like her be lonesome. And, naturally, your son was the first to speak to her."

He finished: "They're walkin' together now on Second Avenue, comin' this way, so—"

"Get out of here!" Fara roared. "And stay away from me with your gloating. Get out!"

The man hadn't expected such an ignominious ending. He flushed scarlet, then went out, slamming the door.

Fara stood for a moment, every muscle stiff; then, with an abrupt, jerky movement, he shut off his power, and went out into the street.

The time to put a stop to that kind of thing was—now!

He had no clear plan, just that violent determination to put an immediate end to an impossible situation. And it was all mixed up with his anger against Cayle. How could he have had such a worthless son, he who paid his debts and worked hard, and tried to be decent and to live up to the highest standards of the empress?

A brief, dark thought came to Fara that maybe there was some bad blood on Creel's side. Not from her mother, of course—Fara added the mental thought hastily. *There* was a fine, hard-working woman, who hung on to her money, and who would leave Creel a tidy sum one of these days.

But Creel's father had disappeared when Creel was only a child, and there had been some vague scandal about his having taken up with a telestat actress.

And now Cayle with this weapon-shop girl. A girl who had let herself be picked up—

He saw them, as he turned the corner onto Second Avenue. They were walking a hundred feet distant, and heading away from Fara. The girl was tall and slender, almost as big as Cayle, and, as Fara came up, she was saying, "You have the wrong idea about us. A person like you can't get a job in our organization. You belong in the Imperial Service, where

they can use young men of good education, good appearance and no scruples. I—”

Fara grasped only dimly that Cayle must have been trying to get a job with these people. It was not clear; and his own mind was too intent on his purpose for it to mean anything at the moment. He said harshly, “Cayle!”

The couple turned, Cayle with the measured unhurriedness of a young man who has gone a long way on the road to steellike nerves; the girl was quicker, but withal dignified.

Fara had a vague, terrified feeling that his anger was too great, self-destroying, but the very violence of his emotions ended that thought even as it came. He said thickly, “Cayle, get home—at once.”

Fara was aware of the girl looking at him curiously from strange, gray-green eyes. No shame, he thought, and his rage mounted several degrees, driving away the alarm that came at the sight of the flush that crept into Cayle’s cheeks.

The flush faded into a pale, tight-lipped anger, Cayle half-turned to the girl, said, “This is the childish old fool I’ve got to put up with. Fortunately, we seldom see each other; we don’t even eat together. What do you think of him?”

The girl smiled impersonally. “Oh, we know Fara Clark; he’s the backbone of the empress in Glay.”

“Yes,” the boy sneered. “You ought to hear him. He thinks we’re living in heaven; and the empress is the divine power. The worst part of it is that there’s no chance of his ever getting that stuffy look wiped off his face.”

They walked off; and Fara stood there. The very extent of what had happened had drained anger from him as if it had never been. There was the realization that he had made a mistake so great that—

He couldn’t grasp it. For long, long now, since Cayle had refused to work in his shop, he had felt this building up to a climax. Suddenly, his own uncontrollable ferocity stood revealed as a partial product of that—deeper—problem.

Only, now that the smash was here, he didn’t want to face it—

All through the day in his shop, he kept pushing it out of his mind, kept thinking, would this go on now, as before, Cayle and he living in the same house, not even looking at each other when they met, going to bed at different times, getting up, Fara at 6:30, Cayle at noon? Would *that* go on through all the days and years to come?

When he arrived home, Creel was waiting for him. She

said, "Fara, he wants you to loan him five hundred credits, so that he can go to Imperial City."

Fara nodded wordlessly. He brought the money back to the house the next morning, and gave it to Creel, who took it into the bedroom.

She came out a minute later. "He says to tell you good-bye."

When Fara came home that evening, Cayle was gone. He wondered whether he ought to feel relieved or—what?

The days passed. Fara worked. He had nothing else to do, and the gray thought was often in his mind that now he would be doing it till the day he died. Except—

Fool that he was—he told himself a thousand times how big a fool—he kept hoping that Cayle would walk into the shop and say, "Father, I've learned my lesson. If you can ever forgive me, teach me the business, and then you retire to a well-earned rest."

It was exactly a month to a day after Cayle's departure that the telestat clicked on just after Fara had finished lunch. "Money call," it sighed, "money call."

Fara and Creel looked at each other. "Eh," said Fara finally, "money call for us."

He could see from the gray look in Creel's face the thought that was in her mind. He said under his breath: "Damn that boy!"

But he felt relieved. Amazingly relieved! Cayle was beginning to appreciate the value of parents and—

He switched on the viewer. "Come and collect," he said.

The face that came on the screen was heavy-jowled, beetle-browed—and strange. The man said, "This is Clerk Pearton of the Fifth Bank of Ferd. We have received a sight draft on you for ten thousand credits. With carrying charges and government tax, the sum required will be twelve thousand one hundred credits. Will you pay it now or will you come in this afternoon and pay it?"

"B-but . . . b-but—" said Fara. "W—who—"

He stopped, conscious of the stupidity of the question, dimly conscious of the heavy-faced man saying something about the money having been paid out to one Cayle Clark that morning in Imperial City. At last, Fara found his voice:

"But the bank had no right," he expostulated, "to pay out the money without my authority. I—"

The voice cut him off coldly: "Are we then to inform our

central that the money was obtained under false pretenses? Naturally, an order will be issued immediately for the arrest of your son."

"Wait . . . wait—" Fara spoke blindly. He was aware of Creel beside him, shaking her head at him. She was as white as a sheet, and her voice was a sick, stricken thing, as she said, "Fara, let him go. He's through with us. We must be as hard—let him go."

The words rang senselessly in Fara's ears. They didn't fit into any normal pattern. He was saying:

"I . . . I haven't got— How about my paying . . . installments? I—"

"If you wish a loan," said Clerk Pearton, "naturally we will be happy to go into the matter. I might say that when the draft arrived, we checked up on your status, and we are prepared to loan you eleven thousand credits on indefinite call with your shop as security. I have the form here, and if you are agreeable, we will switch this call through the registered circuit, and you can sign at once."

"Fara, no."

The clerk went on: "The other eleven hundred credits will have to be paid in cash. Is that agreeable?"

"Yes, yes, of course, I've got twenty-five hund—" He stopped his chattering tongue with a gulp; then: "Yes, that's satisfactory."

The deal completed, Fara whirled on his wife. Out of the depths of his hurt and bewilderment, he raged: "What do you mean, standing there and talking about not paying it? You said several times that I was responsible for his being what he is. Besides, we don't know why he needed the money. He—"

Creel said in a low, dead tone: "In one hour, he's stripped us of our life work. He did it deliberately, thinking of us as two old fools, who wouldn't know any better than to pay it."

Before he could speak, she went on, "Oh, I know I blamed you, but in the final issue, I knew it was he. He was always cold and calculating, but I was weak, and I was sure that if you handled him in a different . . . and besides I didn't want to see his faults for a long time. He—"

"All I see," Fara interrupted doggedly, "is that I have saved our name from disgrace."

His high sense of duty rightly done lasted until midafternoon, when the bailiff from Ferd came to take over the shop.

"But what—" Fara began.

The bailiff said, "The Automatic Atomic Repair Shops,

Limited, took over your loan from the bank, and are foreclosing. Have you anything to say?"

"It's unfair," said Fara. "I'll take it to court. I'll—"

He was thinking dazedly: *If the empress ever learned of this, she'd . . . she'd—*

The courthouse was a big, gray building; and Fara felt emptier and colder every second, as he walked along the gray corridors. In Glay, his decision not to give himself into the hands of a bloodsucker of a lawyer had seemed a wise act. Here, in these enormous halls and palatial rooms, it seemed the sheerest folly.

He managed, nevertheless, to give an articulate account of the criminal act of the bank in first giving Cayle the money, then turning over the note to his chief competitor, apparently within minutes of his signing it. He finished with: "I'm sure, sir, the empress would not approve of such goings-on against honest citizens. I—"

"How dare you," said the cold-voiced creature on the bench, "use the name of her holy majesty in support of your own gross self-interest?"

Fara shivered. The sense of being intimately a member of the empress' great human family yielded to a sudden chill and a vast mind-picture of the ten million icy courts like this, and the myriad malevolent and heartless men—*like this*—who stood between the empress and her loyal subject, Fara.

He thought passionately: If the empress knew what was happening here, how unjustly he was being treated, she would—

Or would she?

He pushed the crowding, terrible doubt out of his mind—came out of his hard reverie with a start, to hear the Cadi saying, "Plaintiff's appeal dismissed, with costs assessed at seven hundred credits, to be divided between the court and the defense solicitor in the ratio of five to two. See to it that the appellant does not leave till the costs are paid. Next case—"

Fara went alone the next day to see Creel's mother. He called first at "Farmer's Restaurant" at the outskirts of the village. The place was, he noted with satisfaction in the thought of the steady stream of money flowing in, half full, though it was only midmorning. But madame wasn't there. Try the feed store.

He found her in the back of the feed store, overseeing the weighing out of grain into cloth measures. The hard-faced old woman heard his story without a word. She said finally, curtly, "Nothing doing, Fara. I'm one who has to make loans often from the bank to swing deals. If I tried to set you up in business, I'd find the Automatic Atomic Repair people getting after me. Besides, I'd be a fool to turn money over to a man who lets a bad son squeeze a fortune out of him. Such a man has no sense about worldly things.

"And I won't give you a job because I don't hire relatives in my business." She finished: "Tell Creel to come and live at my house. I won't support a man, though. That's all."

He watched her disconsolately for a while, as she went on calmly superintending the clerks who were manipulating the old, no longer accurate measuring machines. Twice her voice echoed through the dust-filled interior, each time with a sharp: "That's overweight, a gram at least. Watch your machine."

Though her back was turned, Fara knew by her posture that she was still aware of his presence. She turned at last with an abrupt movement and said, "Why don't you go to the weapon shop? You haven't anything to lose and you can't go on like this."

Fara went out, then, a little blindly. At first the suggestion that he buy a gun and commit suicide had no real personal application. But he felt immeasurably hurt that his mother-in-law should have made it.

Kill himself? Why, it was ridiculous. He was still only a young man, going on fifty. Given the proper chance, with his skilled hands, he could wrest a good living even in a world where automatic machines were encroaching everywhere. There was always room for a man who did a good job. His whole life had been based on that credo.

Kill himself—

He went home to find Creel packing. "It's the common sense thing to do," she said. "We'll rent the house and move into rooms."

He told her about her mother's offer to take her in, watching her face as he spoke. Creel shrugged.

"I told her 'No' yesterday," she said thoughtfully. "I wonder why she mentioned it to you."

Fara walked swiftly over to the great front window overlooking the garden, with its flowers, its pool, its rockery. He tried to think of Creel away from this garden of hers, this

home of two thirds a lifetime, Creel living in rooms—and knew what her mother had meant. There was one more hope—

He waited till Creel went upstairs, then called Mel Dale on the telestat. The mayor's plump face took on an uneasy expression as he saw who it was.

But he listened pontifically, said finally, "Sorry, the council does not loan money; and I might as well tell you, Fara—I have nothing to do with this, mind you—but you can't get a license for a shop any more."

"W-what?"

"I'm sorry!" The mayor lowered his voice. "Listen, Fara, take my advice and go to the weapon shop. These places have their uses."

There was a click, and Fara sat staring at the blank face of the viewing screen.

So it was to be—death!

He waited until the street was empty of human beings, then slipped across the boulevard, past a design of flower gardens, and so to the door of the shop. The brief fear came that the door wouldn't open, but it did, effortlessly.

As he emerged from the dimness of the alcove into the shop proper, he saw the silver-haired old man sitting in a corner chair, reading under a softly bright light. The old man looked up, put aside his book, then rose to his feet.

"It's Mr. Clark," he said quietly. "What can we do for you?"

A faint flush crept into Fara's cheeks. In a dim fashion, he had hoped that he would not suffer the humiliation of being recognized; but now that his fear was realized, he stood his ground stubbornly. The important thing about killing himself was that there be no body for Creel to bury at great expense. Neither knife nor poison would satisfy that basic requirement.

"I want a gun," said Fara, "that can be adjusted to disintegrate a body six feet in diameter in a single shot. Have you that kind?"

Without a word, the old man turned to a showcase, and brought forth a sturdy gem of a revolver that glinted with all the soft colors of the inimitable Ordine plastic. The man said in a precise voice, "Notice the flanges on this barrel are little more than bulges. This makes the model ideal for carrying in a shoulder holster under the coat; it can be drawn very

swiftly because, when properly attuned, it will leap toward the reaching hand of its owner. At the moment it is attuned to me. Watch while I replace it in its holster and—”

The speed of the draw was absolutely amazing. The old man's fingers moved; and the gun, four feet away, was in them. There was no blur of movement. It was like the door the night that it had slipped from Fara's grasp, and slammed noiselessly in Constable Jor's face. *Instantaneous!*

Fara, who had parted his lips as the old man was explaining, to protest the utter needlessness of illustrating any quality of the weapon except what he had asked for, closed them again. He stared in a brief, dazed fascination; and something of the wonder that was here held his mind and his body.

He had seen and handled the guns of soldiers, and they were simply ordinary metal or plastic things that one used clumsily like any other material substance, not like this at all, not possessed of a dazzling life of their own, leaping with an intimate eagerness to assist with all their superb power the will of their master. They—

With a start, Fara remembered his purpose. He smiled wryly, and said, “All this is very interesting. But what about the beam that can fan out?”

The old man said calmly, “At pencil thickness, this beam will pierce any body except certain alloys of lead up to four hundred yards. With proper adjustment of the firing nozzle, you can disintegrate a six-foot object at fifty yards or less. This screw is the adjustor.”

He indicated a tiny device in the muzzle itself. “Turn it to the left to spread the beam, to the right to close it.”

Fara said, “I'll take the gun. How much is it?”

He saw that the old man was looking at him thoughtfully; the oldster said finally, slowly, “I have previously explained our regulations to you, Mr. Clark. You recall them, of course?”

“Eh!” said Fara, and stopped, wide-eyed. It wasn't that he didn't remember them. It was simply—

“You mean,” he gasped, “those things actually apply. They're not—”

With a terrible effort, he caught his spinning brain and blurring voice. Tense and cold, he said, “All I want is a gun that will shoot in self-defense, but which I can turn on myself if I have to or—want to.”

“Oh, suicide!” said the old man. He looked as if a great

understanding had suddenly dawned on him. "My dear sir, we have no objection to your killing yourself at any time. That is your personal privilege in a world where privileges grow scantier every year. As for the price of this revolver, it's four credits."

"Four cre . . . only four credits!" said Fara.

He stood, absolutely astounded, his whole mind snatched from its dark purpose. Why, the plastic alone was—and the whole gun with its fine, intricate workmanship—twenty-five credits would have been dirt cheap.

He felt a brief thrill of utter interest; the mystery of the weapon shops suddenly loomed as vast and important as his own black destiny. But the old man was speaking again:

"And now, if you will remove your coat, we can put on the holster—"

Quite automatically, Fara complied. It was vaguely startling to realize that, in a few seconds, he would be walking out of here, equipped for self-murder, and that there was now not a single obstacle to his death.

Curiously, he was disappointed. He couldn't explain it, but somehow there had been in the back of his mind a hope that these shops might, just might—what?

What indeed? Fara sighed wearily—and grew aware again of the old man's voice, saying:

"Perhaps you would prefer to step out of our side door. It is less conspicuous than the front."

There was no resistance in Fara. He was dimly conscious of the man's fingers on his arm, half guiding him; and then the old man pressed one of several buttons on the wall—so that's how it was done—and there was the door.

He could see flowers beyond the opening; without a word he walked toward them. He was outside before he realized it.

Fara stood for a moment in the neat little pathway, striving to grasp the finality of his situation. But nothing would come except a curious awareness of many men around him; for a long second, his brain was like a log drifting along a stream at night.

Through that darkness grew a consciousness of something wrong; the wrongness was there in the back of his mind, as he turned leftward to go to the front of the weapon store.

Vagueness transformed to a shocked, startled sound. For—he was not in Glay, and the weapon shop *wasn't* where it had been. In its place—

A dozen men brushed past Fara to join a long line of men farther along. But Fara was immune to their presence, their strangeness. His whole mind, his whole vision, his very being was concentrating on the section of machine that stood where the weapon shop had been.

A machine, oh, a machine—

His brain lifted up, up in his effort to grasp the tremendousness of the dull-metaled immensity of what was spread here under a summer sun beneath a sky as blue as a remote southern sea.

The machine towered into the heavens, five great tiers of metal, each a hundred feet high; and the superbly streamlined five hundred feet ended in a peak of light, a gorgeous spire that tilted straight up a sheer two hundred feet farther, and matched the very sun for brightness.

And it *was* a machine, not a building, because the whole lower tier was alive with shimmering lights, mostly green, but sprinkled colorfully with red and occasionally a blue and yellow. Twice, as Fara watched, green lights directly in front of him flashed unscintillatingly into red.

The second tier was alive with white and red lights, although there were only a fraction as many lights as on the lowest tier. The third section had on its dull-metal surface only blue and yellow lights; they twinkled softly here and there over the vast area.

The fourth tier was a series of signs that brought the beginning of comprehension. The whole sign was:

WHITE	—	BIRTHS
RED	—	DEATHS
GREEN	—	LIVING
BLUE	—	IMMIGRATION TO EARTH
YELLOW	—	EMIGRATION

The fifth tier was also all sign, finally explaining:

POPULATIONS	
SOLAR SYSTEM	19,174,463,747
EARTH	11,193,247,361
MARS	1,097,298,604
VENUS	5,141,053,811
MOONS	1,742,863,971

The numbers changed, even as he looked at them, leaping

up and down, shifting below and above what they had first been. People were dying, being born, moving to Mars, to Venus, to the moons of Jupiter, to Earth's moon, and others coming back again, landing minute by minute in the thousands of spaceports. Life went on in its gigantic fashion—and here was the stupendous record. Here was—

"Better get in line," said a friendly voice beside Fara. "It takes quite a while to put through an individual case, I understand."

Fara stared at the man. He had the distinct impression of having had senseless words flung at him. "In line?" he started—and stopped himself with a jerk that hurt his throat.

He was moving forward, blindly, ahead of the younger man, thinking a curious jumble that this must have been how Constable Jor was transported to Mars—when another of the man's words penetrated.

"Case?" said Fara violently. "Individual case!"

The man, a heavy-faced, blue-eyed young chap of around thirty-five, looked at him curiously: "You must know why you're here," he said. "Surely, you wouldn't have been sent through here unless you had a problem of some kind that the weapon shop courts will solve for you; there's no other reason for coming to Information Center."

Fara walked on because he was in the line now, a fast-moving line that curved him inexorably around the machine; and seemed to be heading him toward a door that led into the interior of the great metal structure.

So it was a building as well as a machine.

A problem, he was thinking, why, of course, he had a problem, a hopeless, insoluble, completely tangled problem so deeply rooted in the basic structure of Imperial civilization that the whole world would have to be overturned to make it right.

With a start, he saw that he was at the entrance. And the awed thought came: In seconds he would be committed irrevocably to—what?

Inside was a long, shining corridor, with scores of completely transparent hallways leading off the main corridor. Behind Fara, the young man's voice said, "There's one, practically empty. Let's go."

Fara walked ahead; and suddenly he was trembling. He had already noticed that at the end of each side hallway were some dozen young women sitting at desks, interviewing men

and . . . and, good heavens, was it possible that all this meant—

He grew aware that he had stopped in front of one of the girls.

She was older than she had looked from a distance, over thirty, but good-looking, alert. She smiled pleasantly, but impersonally, and said, "Your name, please?"

He gave it before he thought and added a mumble about being from the village of Glay. The woman said, "Thank you. It will take a few minutes to get your file. Won't you sit down?"

He hadn't noticed the chair. He sank into it; and his heart was beating so wildly that he felt choked. The strange thing was that there was scarcely a thought in his head, nor a real hope; only an intense, almost mind-wrecking excitement.

With a jerk, he realized that the girl was speaking again, but only snatches of her voice came through that screen of tension in his mind:

"—Information Center is . . . in effect . . . a bureau of statistics. Every person born . . . registered here . . . their education, change of address . . . occupation . . . and the highlights of their life. The whole is maintained by . . . combination of . . . unauthorized and unsuspected liaison with . . . Imperial Chamber of Statistics and . . . through medium of agents . . . in every community—"

It seemed to Fara that he was missing vital information, and that if he could only force his attention and hear more—He strained, but it was no use; his nerves were jumping madly and—

Before he could speak, there was a click, and a thin, dark plate slid onto the woman's desk. She took it up and examined it. After a moment, she said something into a mouth-piece, and in a short time two more plates precipitated out of the empty air onto her desk. She studied them passively, looked up finally.

"You will be interested to know," she said, "that your son, Cayle, bribed himself into a commission in the Imperial army with five thousand credits."

"Eh?" said Fara. He half rose from his chair, but before he could say anything, the young woman was speaking again, firmly, "I must inform you that the weapon shops take no action against individuals. Your son can have his job, the money he stole; we are not concerned with moral correction. That must come naturally from the individual, and from the

people as a whole—and now if you will give me a brief account of your problem for the record and the court.”

Sweating, Fara sank back into his seat; his mind was heaving; most desperately, he wanted more information about Cayle. He began: “But . . . but what . . . how—” He caught himself; and in a low voice described what had happened. When he finished, the girl said, “You will proceed now to the Name Room; watch for your name, and when it appears go straight to Room 474. Remember, 474—and now, the line is waiting, if you please—”

She smiled politely, and Fara was moving off almost before he realized it. He half turned to ask another question, but an old man was sinking into his chair. Fara hurried on, along a great corridor, conscious of curious blasts of sound coming from ahead.

Eagerly, he opened the door; and the sound crashed at him with all the impact of a sledgehammer blow.

It was such a colossal, incredible sound that he stopped short, just inside the door, shrinking back. He stood then trying to blink sense into a visual confusion that rivaled in magnitude that incredible tornado of noise.

Men, men, men everywhere; men by the thousands in a long, broad auditorium, packed into rows of seats, pacing with an abandon of restlessness up and down aisles, and all of them staring with a frantic interest at a long board marked off into squares, each square lettered from the alphabet, from A, B, C and so on to Z. The tremendous board with its lists of names ran the full length of the immense room.

The Name Room, Fara was thinking shakily, as he sank into a seat—and his name would come up in the C's, and then—

It was like sitting in at a no-limit poker game, watching the jewel-precious cards turn up. It was like playing the exchange with all the world at stake during a stock crash. It was nerve-racking, dazzling, exhausting, fascinating, terrible, mind-destroying, stupendous. It was—

It was like nothing else on the face of the earth.

New names kept flashing on to the twenty-six squares; and men would shout like insane beings and some fainted, and the uproar was absolutely shattering; the pandemonium raged on, one continuous, unbelievable sound.

And every few minutes a great sign would flash along the board, telling everyone:

“WATCH YOUR OWN INITIALS.”

Fara watched, trembling in every limb. Each second it seemed to him that he couldn't stand it an instant longer. He wanted to scream at the room to be silent; he wanted to jump up to pace the floor, but others who did that were yelled at hysterically, threatened wildly, hated with a mad, murderous ferocity.

Abruptly, the blind savagery of it scared Fara. He thought unsteadily: "I'm not going to make a fool of myself. I—"

"Clark, Fara—" winked the board. "Clark, Fara—"

With a shout that nearly tore off the top of his head, Fara leaped to his feet. "That's me!" he shrieked. "Me!"

No one turned; no one paid the slightest attention. Shamed, he slunk across the room where an endless line of men kept crowding into a corridor beyond.

The silence in the long corridor was almost as shattering as the mind-destroying noise it replaced. It was hard to concentrate on the idea of a number—474.

It was completely impossible to imagine what could lie beyond—474.

The room was small. It was furnished with a small, business-type table and two chairs. On the table were seven neat piles of folders, each pile a different color. The piles were arranged in a row in front of a large, milky-white globe, that began to glow with a soft light. Out of its depths, a man's baritone voice said, "Fara Clark?"

"Yes," said Fara.

"Before the verdict is rendered in your case," the voice went on quietly, "I want you to take a folder from the blue pile. The list will show the Fifth Interplanetary Bank in its proper relation to yourself and the world, and it will be explained to you in due course."

The list, Fara saw, was simply that, a list of the names of companies. The names ran from A to Z, and there were about five hundred of them. The folder carried no explanation; and Fara slipped it automatically into his side pocket, as the voice came again from the shining globe: "It has been established," the words came precisely, "that the Fifth Interplanetary Bank perpetrated upon you a gross swindle, and that it is further guilty of practicing scavengery, deception, blackmail and was accessory in a criminal conspiracy.

"The bank made contact with your son, Cayle, through what is quite properly known as a scavenger, that is, an employee who exists by finding young men and women who are normally capable of drawing drafts on their parents or other

victims. The scavenger obtains for this service a commission of eight percent, which is always paid by the person making the loan, in this case your son.

"The bank practiced deception in that its authorized agents deceived you in the most culpable fashion by pretending that it had already paid out the ten thousand credits to your son, whereas the money was not paid over until your signature had been obtained.

"The blackmail guilt arises out of a threat to have your son arrested for falsely obtaining a loan, a threat made at a time when no money had exchanged hands. The conspiracy consists of the action whereby your note was promptly turned over to your competitor.

"The bank is accordingly triple-fined, thirty-six thousand three hundred credits. It is not in our interest, Fara Clark, for you to know how this money is obtained. Suffice to know that the bank pays it, and that of the fine the weapon shops allocate to their own treasury a total of one half. The other half—"

There was a *plop*; a neatly packaged pile of bills fell onto the table. "For you," said the voice; and Fara, with trembling fingers, slipped the package into his coat pocket. It required the purest mental and physical effort for him to concentrate on the next words that came:

"You must not assume that your troubles are over. The re-establishment of your motor repair shop in Glay will require force and courage. Be discreet, brave and determined, and you cannot fail. Do not hesitate to use the gun you have purchased in defense of your rights. The plan will be explained to you. And now, proceed through the door facing you—"

Fara braced himself with an effort, opened the door and walked through.

It was a dim, familiar room that he stepped into, and there was a silver-haired, fine-faced man who rose from a reading chair, and came forward in the dimness, smiling gravely.

The stupendous, fantastic, exhilarating adventure was over; and he was back in the weapon shop of Glay.

He couldn't get over the wonder of it—this great and fascinating organization established here in the very heart of a ruthless civilization, a civilization that had in a few brief weeks stripped him of everything he possessed.

With a deliberate will, he stopped that glowing flow of thought. A dark frown wrinkled his solidly built face; he said,

"The . . . judge—" Fara hesitated over the name, frowned again, annoyed at himself, then went on: "The judge said that, to reestablish myself I would have to—"

"Before we go into that," said the old man quietly, "I want you to examine the blue folder you brought with you."

"Folder?" Fara echoed blankly. It took a long moment to remember that he had picked up a folder from the table in Room 474.

He studied the list of company names with a gathering puzzlement, noting that the name of Automatic Atomic Motor Repair Shops was well down among the A's, and the Fifth Interplanetary Bank only one of several great banks included. Fara looked up finally:

"I don't understand," he said; "are these the companies you have had to act against?"

The silver-haired man smiled grimly, shook his head. "That is not what I mean. These firms constitute only a fraction of the eight hundred thousand companies that are constantly in our books."

He smiled again, humorlessly: "These companies all know that, because of us, their profits on paper bear no relation to their assets. What they don't know is how great the difference really is; and, as we want a general improvement in business morals, not merely more skillful scheming to outwit us, we prefer them to remain in ignorance."

He paused, and this time he gave Fara a searching glance, said at last: "The unique feature of the companies on this particular list is that they are every one wholly owned by Empress Isher."

He finished swiftly: "In view of your past opinions on that subject, I do not expect you to believe me."

Fara stood as still as death, for—he did believe with unquestioning conviction, completely, finally. The amazing, the unforgivable thing was that all his life he had watched the march of ruined men into the oblivion of poverty and disgrace—and blamed *them*.

Fara groaned. "I've been like a madman," he said. "Everything the empress and her officials did was right. No friendship, no personal relationship could survive with me that did not include belief in things as they were. I suppose if I started to talk against the empress I would receive equally short shrift."

"Under no circumstances," said the old man grimly, "must you say anything against her majesty. The weapon shops will

not countenance any such words, and will give no further aid to anyone who is so indiscreet. The reason is that, for the moment, we have reached an uneasy state of peace with the Imperial government. We wish to keep it that way; beyond that I will not enlarge on our policy.

"I am permitted to say that the last great attempt to destroy the weapon shops was made seven years ago, when the glorious Innelda Isher was twenty-five years old. That was a secret attempt, based on a new invention; and failed by purest accident because of our sacrifice of a man from seven thousand years in the past. That may sound mysterious to you, but I will not explain.

"The worst period was reached some forty years ago when every person who was discovered receiving aid from us was murdered in some fashion. You may be surprised to know that your father-in-law was among those assassinated at that time."

"Creel's father!" Fara gasped. "But—"

He stopped. His brain was reeling; there was such a rush of blood to his head that for an instant he could hardly see.

"But," he managed at last, "it was reported that he ran away with another woman."

"They always spread a vicious story of some kind," the old man said; and Fara was silent, stunned.

The other went on: "We finally put a stop to their murders by killing the three men from the top down, *excluding* the royal family, who gave the order for the particular execution involved. But we do not again want that kind of bloody murder.

"Nor are we interested in any criticism of our toleration of so much that is evil. It is important to understand that *we do not interfere in the main stream of human existence*. We right wrongs; we act as a barrier between the people and their more ruthless exploiters. Generally speaking, we help only honest men; that is not to say that we do not give assistance to the less scrupulous, but only to the extent of selling them guns—which is a very great aid indeed, and which is one of the reasons why the government is relying almost exclusively for its power on an economic chicanery.

"In the four thousand years since the brilliant genius Walter S. DeLany invented the vibration process that made the weapon shops possible, and laid down the first principles of weapon shop political philosophy, we have watched the tide of government swing backward and forward between democ-

racy under a limited monarchy to complete tyranny. And we have discovered one thing:

"People always have the kind of government they want. When they want change, they must change it. As always we shall remain an incorruptible core—and I mean that literally; we have a psychological machine that never lies about a man's character—I repeat, an incorruptible core of human idealism, devoted to relieving the ills that arise inevitably under any form of government.

"But now—your problem. It is very simple, really. You must fight, as all men have fought since the beginning of time for what they valued, for their just rights. As you know, the Automatic Repair people removed all your machinery and tools within an hour of foreclosing on your shop. This material was taken to Ferd, and then shipped to a great warehouse on the coast.

"We recovered it, and with our special means of transportation have now replaced the machines in your shop. You will accordingly go there and—"

Fara listened with a gathering grimness to the instructions, nodded finally, his jaw clamped tight.

"You can count on me," he said curtly. "I've been a stubborn man in my time; and though I've changed sides, I haven't changed *that*."

Going outside was like returning from life to—death; from hope to—reality.

Fara walked along the quiet streets of Glay at darkest night. For the first time it struck him that the weapon shop Information Center must be halfway around the world, for it had been day, brilliant day.

The picture vanished as if it had never existed, and he grew aware again, preternaturally aware of the village of Glay asleep all around him. Silent, peaceful—yet ugly, he thought, ugly with the ugliness of evil enthroned.

He thought: The right to buy weapons—and his heart swelled into his throat; the tears came to his eyes.

He wiped his vision clear with the back of his hand, thought of Creel's long dead father, and strode on, without shame. Tears were good for an angry man.

The shop was the same, but the hard metal padlock yielded before the tiny, blazing, supernal power of the revolver. One flick of fire; the metal dissolved—and he was inside.

It was dark, too dark to see, but Fara did not turn on the lights immediately. He fumbled across to the window control,

turned the windows to darkness vibration, and then clicked on the lights.

He gulped with awful relief. For the machines, his precious tools that he had seen carted away within hours after the bailiff's arrival, were here again, ready for use.

Shaky from the pressure of his emotion, Fara called Creel on the telestat. It took a little while for her to appear; and she was in her dressing robe. When she saw who it was she turned a dead white.

"Fara, oh, Fara, I thought—"

He cut her off grimly: "Creel, I've been to the weapon shop. I want you to do this: go straight to your mother. I'm here at my shop. I'm going to stay here day and night until it's settled that I *stay*. . . . I shall go home later for some food and clothing, but I want you to be gone by then. Is that clear?"

Color was coming back into her lean, handsome face. She said: "Don't you bother coming home, Fara. I'll do everything necessary. I'll pack all that's needed into the carplane, including a folding bed. We'll sleep in the back room of the shop."

Morning came palely, but it was ten o'clock before a shadow darkened the open door; and Constable Jor came in. He looked shamefaced.

"I've got an order here for your arrest," he said.

"Tell those who sent you," Fara replied deliberately, "that I resisted arrest—with a gun."

The deed followed the words with such rapidity that Jor blinked. He stood like that for a moment, a big, sleepy-looking man, staring at that gleaming, magical revolver; then:

"I have a summons here ordering you to appear at the great court of Ferd this afternoon. Will you accept it?"

"Certainly."

"Then you will be there?"

"I'll send my lawyer," said Fara. "Just drop the summons on the floor there. Tell them I took it."

The weapon shop man had said, "Do not ridicule by word any legal measure of the Imperial authorities. Simply disobey them."

Jor went out, and seemed relieved. It took an hour before Mayor Mel Dale came pompously through the door.

"See here, Fara Clark," he bellowed from the doorway. "You can't get away with this. This is defiance of the law."

Fara was silent as His Honor waddled farther into the building. It was puzzling, almost amazing, that Mayor Dale

would risk his plump, treasured body. Puzzlement ended as the mayor said in a low voice, "Good work, Fara; I knew you had it in you. There's dozens of us in Glay behind you, so stick it out. I had to yell at you just now, because there's a crowd outside. Yell back at me, will you? Let's have a real name calling. But, first, a word of warning: the manager of the Automatic Repair Shop is on his way here with his bodyguards, two of them—"

Shakily, Fara watched the mayor go out. The crisis was at hand. He braced himself, thought: *Let them come, let them—*

It was easier than he had thought—for the men who entered the shop turned pale when they saw the holstered revolver. There was a violence of blustering, nevertheless, that narrowed finally down to:

"Look here," the man said, "we've got your note for twelve thousand one hundred credits. You're not going to deny you owe that money."

"I'll buy it back," said Fara in a stony voice, "for exactly half, not a cent more."

The strong-jawed young man looked at him for a long time. "We'll take it," he said finally, curtly.

Fara said, "I've got the agreement here—"

His first customer was old man Miser Lan Harris. Fara stared at the long-faced oldster with a vast surmise, and his first, amazed comprehension came of how the weapon shop must have settled on Harris' lot—by arrangement.

It was an hour after Harris had gone that Creel's mother stamped into the shop. She closed the door.

"Well," she said, "you did it, eh? Good work. I'm sorry if I seemed rough with you when you came to my place, but we weapon-shop supporters can't afford to take risks for those who are not on our side.

"But never mind that. I've come to take Creel home. The important thing is to return everything to normal as quickly as possible."

It was over; incredibly it was over. Twice, as he walked home that night, Fara stopped in midstride, and wondered if it had not all been a dream. The air was like wine. The little world of Glay spread before him, green and gracious, a peaceful paradise where time had stood still.

by Donald A. Wollheim (1914-)

Although he is best known as a leading editor and publisher, Donald A. Wollheim has written some twenty science fiction novels and has had one collection (Two Dozen Dragon Eggs, 1969) of stories, many of them for the young adult market. One of the major figures in the early history of fandom and an original Futurian, he worked at Avon Books and then edited the science fiction line at Ace before starting DAW Books in 1971. Also a noted anthologist, his Annual World's Best SF (previously World's Best SF) has maintained a consistently high standard.

"Mimic," addresses an important sf theme that would later be treated by writers as diverse as Mark Clifton and Philip K. Dick, and is (arguably) Don Wollheim's finest science fiction story.

(Don Wollheim was the quintessential science fiction fan, at the time when the "fan movement" was in its classic phase. He was articulate, cutting and opinionated and the paper on which he wrote his letters invariably scorched at the edges. I've often thought that if he didn't bleed off his writing talents in denouncing his fellow fans, he would have become a remarkable science fiction writer. "Mimic," for instance, has stayed with me for nearly forty years, and I strongly suggested its inclusion even though Don is the publisher of this series, and we might be accused of trying to curry favor. — That would be a ridiculous accusation, by the way, for it is impossible to curry favor with the irascible Don.—I. A.)

It is less than five hundred years since an entire half of the world was discovered. It is less than two hundred years since

the discovery of the last continent. The sciences of chemistry and physics go back scarcely one century. The science of aviation goes back forty years. The science of atomics is being born.

And yet we think we know a lot.

We know little or nothing. Some of the most startling things are unknown to us. When they are discovered, they may shock us to the bone.

We search for secrets in the far islands of the Pacific and among the ice fields of the frozen North, while under our very noses, rubbing shoulders with us every day, there may walk the undiscovered. It is a curious fact of nature that that which is in plain view is oft best hidden.

I have always known of the man in the black cloak. Since I was a child he has always lived on my street, and his eccentricities are so familiar that they go unmentioned except among the casual visitor. Here, in the heart of the largest city in the world, in swarming New York, the eccentric and the odd may flourish unhindered.

As children we had hilarious fun jeering at the man in black when he displayed his fear of women. We watched, in our evil, childish way, for those moments; we tried to get him to show anger. But he ignored us completely and soon we paid him no further heed, even as our parents did.

We saw him only twice a day. Once in the early morning, when we would see his six-foot figure come out of the grimy dark hallway of the tenement at the end of the street and stride down toward the elevated to work—again when he came back at night. He was always dressed in a long, black cloak that came to his ankles, and he wore a wide-brimmed black hat down far over his face. He was a sight from some weird story out of the old lands. But he harmed nobody, and paid attention to nobody.

Nobody—except perhaps women.

When a woman crossed his path, he would stop in his stride and come to a dead halt. We could see that he closed his eyes until she had passed. Then he would snap those wide, watery blue eyes open and march on as if nothing had happened.

He was never known to speak to a woman. He would buy some groceries, maybe once a week, at Antonio's—but only when there were no other patrons there. Antonio said once that he never talked, he just pointed at things he wanted and paid for them in bills that he pulled out of a pocket some-

where under his cloak. Antonio did not like him, but he never had any trouble from him either.

Now that I think of it, nobody ever did have any trouble with him.

We got used to him. We grew up on the street; we saw him occasionally when he came home and went back into the dark hallway of the house he lived in.

He never had visitors, he never spoke to anyone. And he had once built something in his room out of metal.

He had once, years ago, hauled up some long flat metal sheets, sheets of tin or iron, and they had heard a lot of hammering and banging in his room for several days. But that had stopped and that was all there was to that story.

Where he worked I don't know and never found out. He had money, for he was reputed to pay his rent regularly when the janitor asked for it.

Well, people like that inhabit big cities and nobody knows the story of their lives until they're all over. Or until something strange happens.

I grew up, I went to college, I studied.

Finally I got a job assisting a museum curator. I spent my days mounting beetles and classifying exhibits of stuffed animals and preserved plants, and hundreds and hundreds of insects from all over.

Nature is a strange thing, I learned. You learn that very clearly when you work in a museum. You realize how nature uses the art of camouflage. There are twig insects that look exactly like a leaf or a branch of a tree. Exactly.

Nature is strange and perfect that way. There is a moth in Central America that looks like a wasp. It even has a fake stinger made of hair, which it twists and curls just like a wasp's stinger. It has the same colorings and, even though its body is soft and not armored like a wasp's, it is colored to appear shiny and armored. It even flies in the daytime when wasps do, and not at night like all other moths. It moves like a wasp. It knows somehow that it is helpless and that it can survive only by pretending to be as deadly to other insects as wasps are.

I learned about army ants, and their strange imitators.

Army ants travel in huge columns of thousands and hundreds of thousands. They move along in a flowing stream several yards across and they eat everything in their path. Everything in the jungle is afraid of them. Wasps, bees, snakes,

other ants, birds, lizards, beetles—even men run away, or get eaten.

But in the midst of the army ants there also travel many other creatures—creatures that aren't ants at all, and that the army ants would kill if they knew of them. But they don't know of them because these other creatures are disguised. Some of them are beetles that look like ants. They have false markings like ant thoraxes and they run along in imitation of ant speed. There is even one that is so long it is marked like three ants in single file! It moves so fast that the real ants never give it a second glance.

There are weak caterpillars that look like big armored beetles. There are all sorts of things that look like dangerous animals. Animals that are the killers and superior fighters of their groups have no enemies. The army ants and the wasps, the sharks, the hawk, and the felines. So there are a host of weak things that try to hide among them—to mimic them.

And man is the greatest killer, the greatest hunter of them all. The whole world of nature knows man for the irresistible master. The roar of his gun, the cunning of his trap, the strength and agility of his arm place all else beneath him.

Should man then be treated by nature differently from the other dominants, the army ants and the wasps?

It was, as often happens to be the case, sheer luck that I happened to be on the street at the dawning hour when the janitor came running out of the tenement on my street shouting for help. I had been working all night mounting new exhibits.

The policeman on the beat and I were the only people besides the janitor to see the thing that we found in the two dingy rooms occupied by the stranger of the black cloak.

The janitor explained—as the officer and I dashed up the narrow, rickety stairs—that he had been awakened by the sound of heavy thuds and shrill screams in the stranger's rooms. He had gone out in the hallway to listen.

When we got there, the place was silent. A faint light shone from under the doorway. The policeman knocked, there was no answer. He put his ear to the door and so did I. We heard a faint rustling—a continuous slow rustling as of a breeze blowing paper.

The cop knocked again, but there was still no response.

Then, together, we threw our weight at the door. Two hard blows and the rotten old lock gave way. We burst in.

The room was filthy, the floor covered with scraps of torn

paper, bits of detritus and garbage. The room was unfurnished, which I thought was odd.

In the corner there stood a metal box, about four feet square. A tight-box, held together with screws and ropes. It had a lid, opening at the top, which was down and fastened with a sort of wax seal.

The stranger of the black cloak lay in the middle of the floor—dead.

He was still wearing the cloak. The big slouch hat was lying on the floor some distance away. From the inside of the box the faint rustling was coming.

We turned over the stranger, took the cloak off. For several instants we saw nothing amiss and then gradually—horribly—we became aware of some things that were wrong.

His hair was short and curly brown. It stood straight up in its inch-long length. His eyes were open and staring. I noticed first that he had no eyebrows, only a curious dark line in the flesh over each eye.

It was then I realized he had no nose. But no one had ever noticed that before. His skin was oddly mottled. Where the nose should have been there were dark shadowings that made the appearance of a nose, if you only just glanced at him. Like the work of a skillful artist in a painting.

His mouth was as it should be and slightly open—but he had no teeth. His head perched upon a thin neck.

The suit was—not a suit. It was part of him. It was his body.

What we thought was a coat was a huge black wing sheath, like a beetle has. He had a thorax like an insect, only the wing sheath covered it and you couldn't notice it when he wore the cloak. The body bulged out below, tapering off into the two long, thin hind legs. His arms came out from under the top of the "coat." He had a tiny secondary pair of arms folded tightly across his chest. There was a sharp, round hole newly pierced in his chest just above the arms, still oozing a watery liquid.

The janitor fled gibbering. The officer was pale but standing by his duty. I heard him muttering under his breath an endless stream of Hail Marys over and over again.

The lower thorax—the "abdomen"—was very long and insectlike. It was crumpled up now like the wreckage of an airplane fuselage.

I recalled the appearance of a female wasp that had just laid eggs—her thorax had had that empty appearance.

The sight was a shock such as leaves one in full control. The mind rejects it, and it is only in afterthought that one can feel the dim shudder of horror.

The rustling was still coming from the box. I motioned to the white-faced cop and we went over and stood before it. He took the nightstick and knocked away the waxen seal.

Then we heaved and pulled the lid open.

A wave of noxious vapor assailed us. We staggered back as suddenly a stream of flying things shot out of the huge iron container. The window was open, and straight out into the first glow of dawn they flew.

There must have been dozens of them. They were about two or three inches long and they flew on wide gauzy beetle wings. They looked like little men, strangely terrifying as they flew—clad in their black suits, with their expressionless faces and their dots of watery blue eyes. And they flew out on transparent wings that came from under their black beetle coats.

I ran to the window, fascinated, almost hypnotized. The horror of it had not reached my mind at once. Afterward I have had spasms of numbing terror as my mind tries to put the things together. The whole business was so utterly unexpected.

We knew of army ants and their imitators, yet it never occurred to us that we too were army ants of a sort. We knew of stick insects and it never occurred to us that there might be others that disguise themselves to fool, not other animals, but the supreme animal himself—man.

We found some bones in the bottom of that iron case afterwards. But we couldn't identify them. Perhaps we did not try very hard. They might have been human. . . .

I suppose the stranger of the black cloak did not fear women so much as it distrusted them. Women notice men, perhaps, more closely than other men do. Women might become suspicious sooner of the inhumanity, the deception. And then there might perhaps have been some touch of instinctive feminine jealousy. The stranger was disguised as a man, but its sex was surely female. The things in the box were its young.

But it is the other thing I saw when I ran to the window that has shaken me the most. The policeman did not see it. Nobody else saw it but me, and I only for an instant.

Nature practices deceptions in every angle. Evolution will

create a being for any niche that can be found, no matter how unlikely.

When I went to the window, I saw the small cloud of flying things rising up into the sky and sailing away into the purple distance. The dawn was breaking and the first rays of the sun were just striking over the housetops.

Shaken, I looked away from that fourth-floor tenement room over the roofs of lower buildings. Chimneys and walls and empty clotheslines made the scenery over which the tiny mass of horror passed.

And then I saw a chimney, not thirty feet away on the next roof. It was squat and of red brick and had two black pipe ends flush with its top. I saw it suddenly vibrate, oddly. And I saw its red brick surface seem to peel away, and the black pipe openings turn suddenly white.

I saw two big eyes staring into the sky.

A great, flat-winged thing detached itself silently from the surface of the real chimney and darted after the cloud of flying things.

I watched until all had lost themselves in the sky.

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